Welcome to Copper #51!

We've passed New Year's, we've passed CES, and the whole world seems to be recovering from the flu. We hope you're either well, or on the mend.
Our Area 51 is more of a known quantity than that one out in the desert, and we can talk about it without fear of retribution (we hope). Having concluded the three-part series *Time is of the Essence*, Belden engineer Galen Gareis moves on to RCA interconnects. Part 3 concludes John Seetoo's interview with Tom Fine, son of Robert Fine and Wilma Cozart Fine, and a skilled recording/mastering/archival engineer himself.

This issue has a nice mix of good music, tech, and the just plain weird (well, how else to describe the combination of CES and Roy Hall's *Abenteuer in Deutschland*?). Larry Schenbeck goes from the small scale to the BIG; Dan Schwartz moves from basses to bassists with a look at the amazing Danny Thompson; Richard Murison examines the familiar Fletcher-Munson curves in an unfamiliar way; Jay Jay French moves from software to hardware—namely, his stereo equipment over 40 years, starting with turntables; Duncan Taylor discovers again the perils of live recording, especially in a haunted church; Roy Hall takes on the Third Reich—and wins, this time; Anne E. Johnson brings us the shape-shifting indie artist, David Myles; Woody Woodward remembers the magic voice and too-short career of Nat King Cole; and I ponder my trip to the Magic Kingdom of Las Vegas for CES, and consider what it means to be an Editor for over 35 years, while leafing through a big batch of old Stereophile magazines.

Following Industry News on two companies we've discussed before and a photo feature on CES, Copper #51 wraps up with another classic audio cartoon from Charles Rodrigues, and a striking Parting Shot from Paul McGowan. Something Old/Something New will return in Copper #52, with a survey review from Anne.

After our 50th issue went live, and the importance of that milestone sank in...it occurred to Ye Older Every Day Editor that the magazine has never properly acknowledged our contributors with a masthead. Let's correct that here and now in Area 51, with a listing of our regulars, as well as all those who have contributed in the past. Some appeared once; others, several times. Below, once and for all, is Copper's masthead.

Enjoy, and see you next issue!

Cheers, Leebs.

_Copper: The Magazine of Music, Audio, & the Good Stuff_

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_The Copper Canines:_ Buster, Grayson, Trixie
I’ve been listening to, or watching, a lot of new opera lately. Saw Thomas Adès’s *The Exterminating Angel* at the local multiplex, via Met HD; listened to the live Pentatone recording of Jake Heggie’s *It’s A Wonderful Life*; will get my ticket next week for George Benjamin’s newest, *Lessons in Love and Violence*, at the Royal Opera House. (An easy decision, that: we’ll be in London in May, and Benjamin’s 2012 opera *Written on Skin* was the best new work I’d encountered in years.)

So I thought it would be easy to write an opera piece for *Copper* and maintain the focus on comparative scale, as in “Voices.” After all, everybody knows what makes grand opera *grand*, right? For “Voices 2,” I could just pivot from small to big, miniature to meta.

But I was confusing scale—monumentality of all sorts—with psychological scope, i.e., emotional depth. What we love about opera is seldom its mere size but rather the degree to which we can psychically inhabit its stories. *It feels bigger once we’re inside.* Along with text and staging, the music of opera is central to that. In his remarkable short study *Opera and Its Symbols*, Robert Donington tells us it’s partly unconscious:

In opera, where the promptings of irrational imagination are at their most uninhibited and the restraints of naturalism are at their least intrusive, symbols both conscious and unconscious particularly abound. Almost as immediately as dreams, and far more coherently, opera offers a royal road into the unconscious. . . . [Music is] not only unnaturalistic but also time-consuming, circumscribing even as it intensifies, [and thus] opera is impelled to deal in the great generalities of human passion and conflict rather than in the singularities of the situations and characters. . . . What we share [in these generalized portrayals] is that complex network of instinctual and psychological dispositions to which we sometimes give the name of archetypes. Opera is a great purveyor of
archetypal images . . . [which] are by their nature elusive, shifting, hard to pin down or even to define.

In other words, an opera often works best when you don’t fully realize why you’re being swept up in it. As the music pours out, the narrative naturally generalizes but also expands to encompass your life experience, including your fantasies and those of your community. Think of your favorite operas. Think of Mozart. The Magic Flute is openly, self-consciously symbolic. We are meant to recognize Pamina and Tamino as our potential best selves, guided by our better angels (that would be the Three Boys, and probably Sarastro). Yet we know that we more often think and behave like Papageno or Monostatos or the Queen of the Night. There’s always at least one serpent lurking in our unconscious, threatening (or maybe actuating) every step of our personal journey.

Symbols present themselves in Mozart’s Italian comedies too. They may be more cleverly disguised within individual characters, but nevertheless they encourage us to wrestle with desire, deceitfulness, commitment, and betrayal, all the psychic underpinnings of social hierarchy. When we hear a certain innocent excitement in Cherubino’s voice as he sings about his sexual awakening, we remember what that felt like; our hearts glow with the memory. Perhaps we find ourselves identifying even more transparently with Susanna and Figaro as they figure out how to cope with a difficult, predatory boss.

Can “modern” opera also satisfy our need for symbols? Can we identify with the themes and characters in The Exterminating Angel? How about It’s A Wonderful Life? Do those stories work as opera?

Regarding Adès’s Angel, sure. At least that’s the short answer. A veteran opera composer, Adès has chosen a vehicle that’s rich in primal meanings—archetypes, symbols!—but also speaks to our time. You will want to have seen Luis Buñuel’s 1962 film, which blends naturalism and surrealism to create The Dinner Party from Hell. Don’t worry, you’ll get the deeper connotations. Does the music help? Yes, because the composer boldly draws upon all sorts of sounds and styles, from the neo-Romantic (virtual quotations from Rosenkavalier, for example) to the avant-garde (there’s a soprano who hits high-A-above-high-C, also an Ondes Martenon). But the music is not merely appropriate, it goes further into you. It hits, effectively expanding the film’s somewhat limited emotional scope. Honestly, I enjoyed Adès’s opera more than Buñuel’s film. I hope they release a Blu-ray of the Met production. It bears repeated watching.

As for It’s A Wonderful Life, well, it’s got symbols too.

Composer Jake Heggie and librettist Gene Scheer are one of the two most successful creative teams in American opera today. (The other would be John Adams and Peter Sellars.) Heggie is not afraid of tackling big themes: his first full-length opera was Dead Man Walking, based on a best-selling nonfiction book and film that advocated against capital punishment. Among his other triumphs have been adaptations of The End of the Affair and Moby-Dick. (Yes, you read that right.) So: he picks projects with enormous potential. And singers love his music, which is invariably lyrical, essentially Romantic, firmly tonal, and fits well in the voice. It’s “accessible.”

It doesn’t hurt that Heggie subscribes to American opera’s other central dicta, (1) Keep It “American,” and (2) Don’t Scare the Horses. The horses we’re talking about? Not so much audiences—who vary widely in what they desire or are willing to accept—as commissioning organizations and their network of patrons, which include influential artists. If Houston Grand Opera and, say, Joyce DiDonato like it, it’ll get done. It will be composed, premiered, recorded. It will be re-mounted in San Francisco, Chicago, Paris.
But back to *Wonderful Life*. How can it lose? Short answer: it can’t. It doesn’t. By the end of the show, we share in the redemption and transfiguration, respectively, of George Bailey and his guardian spirit, Angel Second Class Clara Odbody. We’re happy that George’s kindness and sacrifice have been recognized, that the villain of the piece—old Mr. Potter, evil banker—has been vanquished, and that the little town of Bedford Falls, New York, survives intact, more aware than ever of its own goodness and good fortune.

Even my curmudgeonly heart found itself awash in benevolent, slightly gooey feelings. That’s in spite of a few rough spots along the way.

Not the performers, and not the SACD, although producer Blanton Alspaugh and Soundmirror’s team don’t entirely overcome the issues inherent in location recording. Patrick Summers leads a polished production with a uniformly fine cast. The principals, especially William Burden (George) and Andrea Carroll (his wife Mary), sing beautifully and contribute apt characterizations (complete cast, production photos [here](#)). But then we know these people already. Heggie and librettist Gene Scheer were working with beloved source material. They didn’t want to mess with what had worked for Frank Capra in 1946. Almost every musical sound you hear in the opera seems utterly appropriate to the characters and the dramatic action. Moreover, that music feels appropriate in a familiar, comforting way, since its general style owes a lot to Max Steiner, John Williams, Bernard Herrmann, Dmitri Tiomkin, and similarly capable Hollywood professionals.

But maybe that’s the problem. A good film composer knows his or her job is mostly to *underline*, to support what’s happening onscreen without drawing attention away from it. If we remember the music after the movie’s over, something may be off. In opera, a synergistic combination of text, music, and staging should lift us higher, put us in a dreamlike place where we can revel in fantasy (or idealism, take your pick) for a while.

Much of the music in Heggie’s *Wonderful Life*, on the other hand, seems designed to keep things moving right along; it’s overactive and a bit noisy. Even when we get to the climax of Act I and what could be a nice love duet for George and Mary, we’re not allowed to dawdle. Given the facile Romanticism of Heggie’s writing, it’s fair to ask: What would Puccini have done?

We already know. He would have sustained that moment, then capped it with a Really Big Tune, like this:

Critic [Steven Brown](#) mentions another Act I love duet—this one irrepressibly American—with vivid sung dialogue and a Big Tune:

Jake Heggie writes beautiful music too, but he can’t or won’t write a Big Tune to save his life. Consider that moment at the end of Act I. George has just found out his brother Harry is going to marry and leave town. That means George will have to take over his dad’s S&L, won’t get his turn at college, won’t get to travel the world. He wanders aimlessly around Bedford Falls, ending up in front of Mary’s house. Turns out she’s home from New York City, having dumped her boyfriend. Then she tries to change the subject.

*[GEORGE stammers, doesn’t quite figure out what Mary's getting at.]*

MARY: *When I threw that rock four years ago, do you know what I wished for? To live in that broken-down Granville house someday—with you, George. That's all I've ever wanted. To build something with you—make something beautiful together. What do you see when you look at me,*
George? Because I hope you see someone who loves adventure as much as you do. Because I do love adventure. I do! It’s just that to me the greatest adventure has always been loving you.

GEORGE: Me? But, Mary, you could have anyone.

MARY: Don’t want “anyone.” I looked, and, well, in the whole city of New York I couldn’t find one person who knew the steps to the Mekee-Mekee.

GEORGE: Really? Not a single person?

MARY: A few knew the twist, shuffle, hop . . . but the step, slide? Hopeless.

GEORGE: Hopeless? Really hopeless?

MARY: You tell me.

GEORGE: Oh, Mary.

MARY: George Bailey, I’m gonna love you ‘til the day I die.

CLARA [a guardian angel, who’s looking on, since all this took place years ago]: How can it happen? From this kiss to a bridge at midnight?

To be fair, this scene has to do some heavy lifting that Puccini and Bernstein handled elsewhere. It’s not even a duet: Mary uses her “When I threw that rock” aria to tell George (the big lunk!) that he’s always been the one. Then, while her words sink in, she uses her ready sense of humor to lighten the mood. We hear echoes of the Mekee-Mekee, a dreadful native dance that symbolizes—and trivializes—George’s wanderlust. They embrace, the music retreats, and Clara the Angel reminds us this was Christmas Past. It’s pretty clever as drama, and anyone can hear that Mary’s aria has some absolutely gorgeous music in it. It’s just over too soon.

Gentle readers, I have compiled what academics call a “reception history.” Young as the operatic Wonderful Life is, it’s been “received” all over the place. The most perceptive reviews came from Opera News, from Gramophone’s Edward Seckerson, and from the aforementioned Mr. Brown. Everyone agreed about the high quality of the Houston performance. Everyone raved about the sets, too, the one aspect of the work that departed radically (!) from Capra’s film. Nice words were shared about Heggie and Scheer before folks got down to specifics, i.e., things they hated; things that felt dead on arrival; et cetera. At least one writer suggested revisions, pointing out that Verdi revised; so did Puccini. Everyone’s little list of complaints was slightly different. So was mine.

Obviously I’d like to talk more about the idea of American opera and those “other central dicta,” but I can’t: word limits and all. Maybe next time. I will say this: if American opera is ever going to amount to something, it needs to get Bigger, meaning that music, words, and staging should lift us out of the ordinary—way out of the ordinary.

No one involved should be afraid to scare a few horses.
While writing the last few chapters, I talked on occasion to Rick Turner. He suggested that I should write about someone who it turns out is a favorite upright bass player us both --- the English bassist, Danny Thompson.

Bear with me here --- his playing has a similar effect on me as the venerable Jack Casady. Once, at an instrument-makers Christmas party, I found myself describing to Casady’s wife that strange effect, a satisfaction as if I’d just eaten a good meal. Often, Thompson has the same effect. I can’t explain it. But certainly no one causes me to wish I’d taken up the upright bass quite as much as he does.

He first came to my attention as a member of (The) Pentangle --- with whom I saw him on their final tour (in maybe 1972?). No Pentangle tunes sum up his playing, for me, more than two back-to-back songs from Solomon’s Seal: “No Love Is Sorrow” and “Jump, Baby, Jump”. Both feature Thompson up-front; in fact, I’d venture that they were composed around the bass part.

http://www.youtube.com/watch?v=v45Tusal2mQ

But you most likely have recordings of him in his role as a session player. He’s recorded with Nick Drake, John Martyn and Kate Bush, as well as many, many others (and that was just in his first couple decades doing it). Listen to the bass on Bush’s “Pull Out the Pin”, from The Dreaming; or on her “Watching You Without Me”, from Hounds of Love. They’re such a spectacular hybrid of her songwriting and her art of abstraction, and Thompson’s bass is the perfect and unusual counterpoint
to her electronics and piano.

Or listen to John Martyn’s album “Solid Air” --- on the title song, it’s just Thompson and Martyn for a spell, before electric piano and tenor sax enter.

I envy all those bassists who worked in English folk music --- Ashley Hutchings, Rick Kemp, Dave Pegg, but especially Thompson. I have to admit a real weakness for the form. But if you don’t love it like I do, then maybe Thompson’s solo projects, called Whatever and Whatever Next are for you. They’re collaborations with the spectacular English guitarist Bernie Holland and Tony Roberts on various reeds; Holland’s playing reminds me of no less than John McLaughlin. Neither quite jazz, nor quite folk --- in that sense, but only in that sense, they’re sort of like the group Oregon.

I was on the road with some folks about a dozen years ago, and mentioned my love of Pentangle. This was met with disapproval all around. Perhaps it’s that Pentangle combined those old British Isles tunes with decidedly non-British influences, like sitar, American Blues and Jazz, and so on. To my ears, this is what makes them so spectacular.

I’ve met Thompson a couple times, and had a bit of conversation with him after one of his appearances at McCabe’s in Santa Monica, California with his frequent collaborator of the last 20 years, Richard Thompson---and no, they’re not related. We talked bass, and basses, and approach. He told me that he bought his old upright for next-to-nothing in 1960. Then he inquired about my upright, and I had to tell him I never really took it up. “What???” says he. I confessed that I’d never found an instrument that did under my hands what his did under his. This he totally understood. (Happily, since then, I have found one. Unhappily, it was about $30,000.)

It’s too much of a stretch to say that sometimes he’s the only aspect of some music that I like.

But only just barely.
I despise dogma---especially when it comes from me. So when I find that pretty much everything I say regarding CES has become strident and predictable---it worries me. Enough so that I may have to say, "I was wrong".

I can't say I despise doing that as much as I despise dogma, but it does require a concerted push to get that statement out.

Let's review: Back at the dawn of tech-time, 1967, the first Consumer Electronics Show was held in two New York City hotels, to the tune of around 100 exhibitors and 17,500 attendees. Home entertainment products---which at that point in time meant stereo equipment and TVs---were the focus, with a strong presence of Japanese manufacturers. By the next year the show had expanded to three hotels, and showed such marvels as a wrist communicator (calling Dick Tracy!) and a portable phone ($2000, 19 pounds, FCC license needed).

In 1971, the show moved to Chicago---and by the late '70s, it had expanded to a summer show (SCES) in Chicago and a winter show (WCES) in Las Vegas. By 1995, the Chicago shows had waned in popularity, and a traveling summer show was tried, with feeble results. In 1998, the winter show in Las Vegas became the sole CES, and so it remains today.

During the last decade, the scope of the show broadened remarkably, resulting in changes to the fine print: the official name of the show was changed to "CES", which now meant absolutely nothing, but was the first step in expanding the show beyond just electronics. Meaningless or no, "CES" was by then widely recognized as "that thing in Vegas with the cool stuff". More recently, the organizing body changed its name from CEA (the Consumer Electronics Association) to CTA (the Consumer
Technology Association), allowing a massive influx of automotive manufacturers, drones, and pretty much anything technological sold to consumers—or which might be, someday.

So what about hi-fi and CES? As stated, it was a core element of the show in the beginning. By the time I attended my first CES in Chicago, 1989, it was still a big part of the show—but there was more and more square footage devoted to computers, video games, VCRs, even a big hall devoted to car stereo demos. The introduction of the DVD in 1995 prompted an even greater focus on big-screen TVs, and audio became more and more an add-on, as an element of home theater systems...rather than a thing unto itself.

In 2007, CES audio and home theater exhibits were moved from the resort-like Alexis Park to the upper floors of the Venetian hotel—the "attic" where remaining audio exhibitors still reside. Many thought the move was to discourage parallel attendance at THE Show, the less-expensive unsanctioned home entertainment show held nearby at the St. Tropez hotel, concurrent with CES.

CEA clearly disliked THE Show; in a conversation with me way back then, an association official once referred to THE as "parasitic bloodsuckers".

By 2010, the Venetian exhibits still covered the 29th and 30th floor, with pieces of 31 and a handful of big suites on 34 and 35. Adding in the 60+ rooms at THE, the were over 300 rooms to cover. As the number of exhibitors declined at both shows, THE organizer Richard Beers sought greener pastures in California, and the first Newport show was held in 2010. After a couple years, Beers killed THE Show-Las Vegas altogether to focus on the booming Newport show.

Without the "parasitic bloodsuckers" siphoning off exhibitors, did the audio exhibits at CES flourish? Nope. The nadir was seemingly reached last year, when audio exhibitors on 29 and 30 were interspersed with non-audio exhibitors like AARP and Simmons mattress.

No, they wouldn't let you take a nap—I checked.

Long story short: unbelievably, inexplicably, this year was...better.

Exhibitors were all contained on 29, save for two up in the rarefied air of 35, literally the high roller suites. Those 29ers were busy, and all those I spoke with, were unbelievably, inexplicably: happy.

Huh.

At this point, I detach from all expectations, all pissy comments. If it works for someone, more power to them.

It ain't the show I loved 30 years ago. But then: what has gone unchanged, unaffected over the last 30 years?

Judging by my thinning gray hair and gimpy knees—nothing.

So...more power to ya. Maybe I'll see you next year.

Stranger things have happened.

Right??
It was Lee Atwater, a controversial campaign strategist for Bush Sr.’s successful 1988 presidential campaign who coined the phrase “Perception is Reality”. Unfortunately for Bush (but more so for Atwater, it must be said), he died before he could contribute to Bush’s unsuccessful 1992 campaign. So the extent to which he would have thrived in today’s political theater of the absurd must remain a matter of speculation. It is also a matter of speculation as to whether or not Atwater was an audiophile. It’s likely that he was, because you can see how his trenchant political aphorism could have been a natural extension of his observations on the fundamentals of audiophilia.

Why do we commonly use the expression “seeing is believing”, but never “hearing is believing”? It is as though we accept fundamentally that when we see something we are seeing the reality of that thing, but when we hear something, we only hear what our senses tell us we are hearing. We must think there is a difference between the two, where in reality there isn’t. We see with great
precision, and hear with only slightly less.

The ear is an extraordinarily complex bio-mechanical transducer. At the end of our ear canal lies the ear drum. This vibrates in response to sound waves travelling down the ear canal. These vibrations impinge upon an assembly of three interlinked tiny bones, the third of which then taps against another smaller ear-drum, at one end of an organ called the cochlea, causing it in turn to vibrate. The cochlea is a fluid-filled organ shaped somewhat like an alien snail shell, and its interior surface is covered with approximately 16,000 tiny hairs, each connected to a nerve ending. Each of these hairs detects vibrations in the cochlear fluid over a very narrow range of frequencies, and passes this information down the nerve cells to the brain.

The brain processes all this information, and the end result is what we perceive ourselves to hear. Interestingly, it is clear that at no point does this system attempt to directly detect the actual sonic waveform. It only ever detects the individual frequencies. You could argue that it directly detects the Fourier Transform of the impinging sound wave! But, interesting as that may be, I want to focus this column on the simplest auditory topic, that of how loud something appears to be when we listen to it, and the various implications of those observations.

Research on audibility had to await the ability to produce and measure calibrated sounds, and so it was not until the 1920’s that it became clear that we perceive loudness on a logarithmic scale. It is generally hard to meaningfully quantify human auditory perception at an experimental level, but the general result is that a linear increase in how loud we perceive something to be requires an exponential increase in the power needed to generate the signal. So a relatively modest variation in perceived loudness requires our ears to possess a quite colossal dynamic range in order to fundamentally detect it.

The next avenue of research involved determining how perceived loudness varies with frequency. Harvey Fletcher and Wilden Munson soon discovered that the ear was most sensitive at frequencies in the 3-4kHz range, and dropped off noticeably at both higher and lower frequencies. This result was in line with what they had expected, but what surprised them was that the amount of drop-off fell noticeably as the volume increased. In other words, if something was perceived to have a flat frequency spectrum at high volume, it would appear to lose its bass and treble progressively at lower volumes (giving rise to the so-called Fletcher-Munson equal loudness curves).

These findings had their first major implications in the emerging field of telephony, where there were severe limitations in the dynamic range that could be transmitted across a telephone line. This meant that the resultant sounds would have not only a limited dynamic range but also an apparently limited frequency content, so that voices heard over the telephone exhibited the now-familiar strangled tonality that we come to associate with the medium. As an interesting aside, when digital telephony first came on-line in the 1980’s, the possibility existed to create telephone conversations with a wider dynamic range and frequency content, resulting in more natural and clear-sounding conversations. Sadly, focus groups (I could strangle the person who invented focus groups) showed that consumers were taken aback by what you might call ‘high-fidelity telephony’ as they had become so conditioned to 50 years of strangled-sounding voices that they expected all telephone conversations to sound that way. Which is why even today voice quality over telephone is quite deliberately kept decidedly lo-fi.

Today, even the most minimalist audio systems still have volume control knobs, so we can adjust the volume to be whatever we want it to be. But ever since the early days of mono there has been an argument about whether volume control was just a convenience factor, or whether there was just the one volume setting at which everything would sound the most natural, or “right”. For the most part, the topic is not really of mainstream interest, but it does raise its ugly head at one critical
If we do an A-B comparison between two different audio setups, it is well known that the louder of the two will tend be perceived to sound better. An unscrupulous dealer (or even just an inept one) can sell you on what he wants to offload by the simple expedient of playing it louder on demo.

From personal experience, this factor becomes more pernicious and more dramatic the higher up the audio chain you go. My own reference system these days inhabits somewhat stratospheric heights. I was using it to compare a prototype Music Server playing back a file located on my NAS over an I²S link to my DAC, with the same file played through my Mac Mini over a USB link. I was left somewhat awestruck by the magnitude of the improvement wrought by the combination of the Music Server and the I²S link. It went way beyond anything I have ever heard before when it came to simply optimizing the digital transmission. And, being unprocessed raw digital signals I was sending to the DAC, the volume levels would be inherently the same ... wouldn’t they? Ugh. I had sometime earlier been verifying BitPerfect’s compatibility with iTunes’ sound check feature following the latest macOS/iTunes update, and had managed to forget that I had left that feature enabled. So the USB-delivered signal turned out to have had 3.1dB of attenuation applied to it.

But when I was A-B switching between the two I didn’t actually detect the volume difference per se, I only detected a wide swathe of qualitative differences related to imaging, soundstaging, microdynamics, tonal richness and the like. At least that’s what I perceived I heard. With sound check disabled and the volume discrepancy eliminated, the Music Server with the I²S link was still clearly preferable, but the magnitude of the differences - and, much more important, the nature of the differences - were more in line with what I would have expected from a direct comparison in the digital domain. But the whole episode poses questions that I am going to have to return to and explore further at some point. [Bearing that in mind, it is interesting that with this latest incarnation of my reference system I find myself being much less anal about getting the volume setting *just right*. I find that if I want it louder or quieter, I want it a good 10dB louder or quieter. The last 3-5dB seems to make little qualitative difference. I’m not sure how to interpret that yet, but given my apparently contradictory observations above I feel honor-bound to mention it.]

If performing A-B comparisons effectively was our biggest loudness-related problem we would all be a lot better off. But it isn’t. Not by far. Most music is listened to on the sonic equivalent of transistor radios. They have such poor dynamic range that the quiet portions of well-recorded tracks just disappear into the noise. So to compensate, music producers (or, in practice, independent mastering specialists contracted by the labels) will address this by applying dynamic compression to the final mix. This basically increases the apparent volume of the quiet parts. Now, there’s nothing especially new about this. LPs have limited dynamic range, and dynamic compression has been judiciously applied during LP mastering for decades. However, back in the day there was some pretty sophisticated equipment used to perform that function, equipment that is now both hard to find and expensive when you do find it. Compare that to today’s digital studios, where a digital compressor is just a mouse click away.

While analog compression can sound remarkably pleasing to the ear – and is often applied for its sonic qualities alone without reference to the compression it applies – digital dynamic compression is well known for producing a poor sonic result. This ends up having dire consequences ... record label suits with MBAs understand that when two tracks are played one after another on the radio, the casual listener tends to prefer the one that sounds louder. So the suit instructs his mastering engineer to ramp the slider on the dynamic compressor up, up, up, and further up, so that it sounds even louder - and will be ‘liked’ even more - than the other guy’s releases. This state of affairs is referred to as the “loudness wars”, and while it was at its peak in the first decade of the millennium, it is still a plague even now. Music which has had extreme digital compression applied is close to juncture.
unlistenable on quality audio equipment, and consequently much popular music produced over the last 15-20 years has been plumbing some all-time depths of sound quality.

Not that dynamic compression is inherently a bad thing. Even the most conscientious producers will apply judicious dynamic compression from time to time. This was recently brought home to me when I downloaded my monthly album from B&W's Society of Sound [a service which, by the way, I continue to wholeheartedly recommend - $60 a year for 24 high-quality high-resolution album downloads]. The album was a 2004 recording of Shostakovich's 11th symphony (LSO, Mstislav Rostropovich) in 24/96 resolution. It appears to be an experiment in capturing the full dynamic range of an orchestra while preserving the totality of the dynamic range, something only a 24-bit recording can realistically hope to achieve. I would suggest that there is quite possibly not a whit of dynamic compression in that recording. With my system set to its normal (i.e. loud!) volume setting, the first ten minutes of the first movement were all but inaudible. So much so that I felt obliged to load the album into Adobe Audition for further inspection.

What I saw confirmed my suspicion. While the loudest passages do indeed reach full modulation, the quietest ones are very quiet indeed. I'm pretty sure I don't have another album in my ~3,200 album collection that displays such a marked dynamic contrast, and it immediately has me considering that all of my other classical recordings which I considered to be fully dynamic - and certainly all of my other recordings of the Shostakovich 11th - must in fact exhibit a significant degree of dynamic compression. For those of you familiar with the Tischmeyer DR meter, this album measures as DR17 overall, with the four individual movements at DR18, DR17, DR18 and DR16, which are impressive enough numbers, although far from unique. So the Tischmeyer metric is capturing the gist of the situation, but is far from telling us the whole story.

Finally, many listeners find it problematic that there are undesirable perceived loudness differences between different tracks within a large music library. This is most evident when playing a random selection of tracks from across the library, and many listeners would like to be able to correct for it by having their system automatically apply a pre-set volume adjustment on a per-track basis during playback. This involves making an assessment of the perceived loudness of each individual track, and then applying gain or attenuation to individual tracks so as to make their perceived loudness the same. It is not a bad practice at all, and, depending on the nature of your music library, you may find it very valuable. The trick is to find an algorithm which can analyze a track and make a one-size-fits-all assessment of its comparative perceived loudness. This is much easier said than done, and is the subject of ongoing research. When doing this, you have to bear in mind that you cannot apply so much gain to a track that you will drive its existing peaks into clipping. For this reason, most loudness compensation schemes mostly apply different levels of attenuation to each track, and very rarely any gain. Surprisingly, iTunes' "sound check" system, which has been around for a while but benefits from ongoing optimization, has quite a good algorithm.

So I'm already well above my assigned word count ... as usual. I hope my perceived assessment of my dear readers' level of patience is not out of whack ... and that Editor Leebs' indulgence is not being unduly tested! [No worries, Richard--pixels are free!--Ed.]
I want to thank you all for your comments on the “Great ’67 Psychedelic Shoot-out”. [In case you missed it: Part 1 Part 2 Part 3 Part 4 Part 5 The Winner! --Ed.] Spoiler alert!: The winner was Pink Floyd’s debut album, Piper At The Gates Of Dawn. I appreciated many of the comments and want stress that the albums had to come out that year (although I stretched credibility a couple of times but, like I said before....My rules....ha ha).

I loved the passion most of brought to your comments and I will have another pretty controversial face-off coming soon.

This next series of articles, however, deals with my personal audio gear and how it progressed over the last 40 years. This progression, I’m afraid, will never be duplicated due to many factors, not the least of which is the economy of scale.

Back in the 60’s, one could get to audio nirvana pretty cheaply.

Even if you couldn’t afford the “Rolls Royce” gear of the day (Marantz, McIntosh, Rek-o-kut, Decca,
Klipschorn, Bozak etc.) you could get pretty close with Dynakit gear, AR speakers and AR turntables.

If one really wants to get in the weeds with this, the facts are that $$3,000 in '65 bought you state of the art audio. [Adjusting for inflation, $3,000 in 1965 = $23,704 today. Obviously, a fair chunk of change---but nothing like what Jay Jay is about to describe!---Ed.]

Today you have top of the line pair of Wilson speakers at $685,000.00, Goldmund turntables at $300,000.00, Tone arms for 30K, phono cartridges for 15k, Phono pre amps at 70K, Mono block amps for 300k, Digital players and D2A converters for 80K and speaker wire up to 80K!

WTF??

All absolutely insane.

But it (we) all started somewhere.

Here’s a history of how I started...

I’m going to start with turntables on this list, and I want to hear from you as to how your journey took you to where you are now.

I will try my best to get the correct years in, but there are crossovers or just plain forgetfulness.

One final thought:

After going over this exercise I realize that one of the conclusions I can draw is that our kids (or just young people in general) will never have the same joy of the discovery experienced by most of the readers of this column.

That is the down side.

The upside is that the almost singular music reference of millennials being MP3’s and headphones, they are going to save hundreds of thousands of dollars in a quest for great sound (which may also save their relationships!).

However way you look at it, I want to see your turntable histories as well

This then, is a history of how I played records since 1964 (and just for fun, Billboard’s Top 100 for 1964 is archived here):

1964 Magnavox console (parents owned-in the living room)

1966 1 piece Westinghouse combo player

1966 Zenith Stereo player with removable speakers

1967 AR

1968 AR w/ Rabco SL8E battery powered tangential tonearm added

1968 Garrard Zero 100 w/Ortofon cart.

1969 Empire 598 w/Ortofon cart.
1970 Dual 1019 w/Shure M91 Cart

Somewhere in the 1970s, Stanton 681EEE cartridge

1971 Thorens TD 124 mk II bought used w/ Shure V15 cart

1972 Thorens TD 125 mk II bought used w/ Shure V15 cart

1980 Kenwood 500D w/ Grace 707 tonearm w/Denon 103D cart

1985 Baby Stad w/ Eminent Technology straight line arm [I thought I'd heard of just about every turntable ever made, but I'd never heard of this one. JayJay explained, "A Swiss table from the 1980's with 3 glass platters. I had the baby (smaller) model, but there was a much larger Stad with 5 glass platters. Also, I just remembered I had a Koetsu rosewood cartridge which I bought in Tokyo on the Eminent arm on the Stad." After consulting with a bunch of audio veterans, I found that the Stad 1 was made by Jean-Francois Le Tallec, and was French, not Swiss. Take a look here.—Ed.]

1993 VPI HW-19 Stock arm; also used with SME 309

2009 VPI Super Scoutmaster w/JMW 10.5 arm Dynavector XV-1S

2016 VPI Avenger w/JMW 10.5 arm w/ Dynavector XV-1S

2017 VPI Avenger Reference w/ 12 inch 3D-printed arm w/ Dynavector XV-1S

Next issue: Amplifiers
Reading the deed in the Grundbuch (land registry) in East Berlin was chilling. It showed that my grandmother had purchased a property in Lichtenberg in 1932. In 1941 a swastika had been stamped on the deed because the owner had defaulted on the mortgage. How ironic. She had fled with my grandfather and uncle to the Gironde in France only to be captured in 1941 and sent with the French transports to Auschwitz. In 1953 the GDR stamped an eagle on it declaring it the property of the East German People.

This was 1990 and I had come to East Berlin.

I had grown up with stories my father had told me about the properties his family had owned in East Berlin. We never had much money and my father said that once the German money arrived, our financial troubles would be over.

He had fled to Scotland in 1939 at age 19. Some German Jews had started a kibbutz in a local farm with the intention of eventually moving to Palestine. In Glasgow he met my mother, married her in 1940 and joined the British army.

My father had been dead seven years in 1989 when the Berlin wall came down and a few months later I travelled there to claim my birthright.

Berlin in 1990 was a city of Technicolor and monochrome. West Berlin was prosperous and fat; East Berlin was poor and thin. One day while driving into East Berlin I stopped at a traffic light near Checkpoint Charlie. In front of me were two cars, side by side. One, a Mercedes had an oversized
driver wearing a cashmere coat and scarf. Alongside him was a gaunt man wearing a fake leather jacket and a cap. He was driving a Trabant, the East German car that sported a plastic body and a two-stroke motor. It was noisy and smoky. East Germans would often wait years before they could purchase one.

On crossing over into East Berlin (the wall was gone but there was a large stretch of no-mans land between the two sides) the contrasts were immediate. The streets had potholes, buildings were crumbling and roofs were repaired using any material at hand. The sidewalks were worn out and the people in the streets looked hungry.

I had a list of names of the properties and wanted to visit them one by one. As a record, I decided to take a photo of the street sign, then the building. The street signs at that time were mounted on lampposts and fairly close to the ground. As I took a photo of Linienstrasse, a thin angry looking man turned the corner and got captured in the frame. He saw my camera and got very agitated and approached me screaming. I had grown up with horror stories about Germans before World War 11 and being accosted on my first visit was chilling. He came right up to me and looked me in the eye. From somewhere deep inside me came this primal roar, “Fuck off”. To my surprise; he stopped and fled. I think I scared the bejesus out of him.

As I walked around Mitte, the area where my family and many Jews lived pre Hitler, I felt that I was being watched. Every so often I would catch someone peeking out from behind a curtain. Everyone was nervous about unification and its ramifications. They had good reason for this as carpetbaggers, like me, sniffing around, were obviously up to something.

My grandfather’s brother had owned a 38,000 square meter poultry farm in East Berlin called the Weisse Taube (White Dove). It raised kosher poultry for the German and Czech market. They even supplied KA DA WE the exclusive department store in the center of West Berlin. It is similar to Bloomingdales in New York but with a food hall more akin to the one in Harrods, London.

The East German State had appropriated the farm but instead of building something permanent they turned it into a large nursery. Legally this was important as the greenhouses were ‘temporary buildings’ and therefore did not cloud the issue of ownership.

Through a relative in Frankfurt I obtained the name of a lawyer in Berlin who specialized in reparations law. His name was Dieter Jacob and he was a charming elderly man with a goatee beard and an infectious laugh. He liked to eat and drink so we hit it off immediately. I called him and he invited me to his office at closing time, 6pm. He told me that every night, after work, he opened a bottle of bubbly and I should come and join him. After the formalities he showed me a book of photos of the Jewish area of East Berlin taken in the 20s and 30s. It presented views of a very vibrant community. I kept looking for my grandparents but didn’t see them. He then passed me a book of photographs of Berlin taken at the end of the war. It showed the utter devastation of the city. He told me that when he returned from the Russian front at the end of the war, he didn’t think Berlin could ever recover.

My father had spent years collecting proof of ownership and rights of inheritance so the paperwork I presented certainly eased the way.

Herr Jacob had cleverly employed an East German paralegal to assist. He knew his way around the system and speedily found the deeds to the properties. I was one of the first people to lodge claims so the process went relatively quickly. The family acquired the deed to the Weisse Taube and as there were about 15 different family members with different percentages of ownership, (and keeping it under these circumstances would have been complicated) we decided to sell it. The German
The government had announced plans to move the seat of government from Bonn to the (soon to be rebuilt) Reichstag in Berlin, so real estate speculation was high.

A relation through marriage, Dr. Schiff, owned 50% of the property (I owned 3.5%); he was a survivor of the war and before moving to Palestine he was in a displaced persons camp in Germany. While there he befriended another Polish survivor called Artur Brauner. Herr Brauner is a world famous producer of films in Germany. At that time he had just released “Europa, Europa”, the true account of a Jewish boy in Hitler’s Germany, who successfully eluded capture by pretending to be Arian. It won a golden globe in the US.

Dr. Schiff had recently bumped into Herr Brauner and told him that he was in Berlin to sell some property. Brauner was immediately interested and after some weeks of negotiation, he agreed to buy the property.

THE DEAL

The cast:

Myself

Dr. Schiff

Herr Jacob (lawyer)

Herr Wolter (notary. In Germany a notary is like an escrow agent. He looks after all the funds and disburses them per the contract)

Herr Wolter’s daughter (she was studying law and had come to observe the transaction. She looked like Michelle Pfeiffer)

Frau Jablonski (secretary)

Artur Brauner (wearing a cape and sporting dyed eyebrows and a moustache)

Artur Brauner’s Architect (resplendent in a black Armani suit)

I had flown in that morning from New York and was feeling fresh as a daisy.

We assembled in Herr Jacob’s office and began reading the contract. German real estate law allows for no ambiguity. Basically it’s a series of steps. You start at the first step and can’t proceed to the next one until everyone has agreed to the prior one. The contract was 86 pages long. Despite that it moved along fairly quickly. At times conversations broke out in several languages. German, English and when Dr. Schiff and I wanted to discuss things privately, Hebrew. During the day, in addition to her secretarial duties, Frau Jablonski was regularly dispensing coffee and soft drinks. What was odd about this was that she was wearing a very short, extremely low cut black evening dress. She had decided that as a famous film producer was there she would try and impress him. Whenever she served us drinks, she put her hand over her chest but when serving Artur Brauner she shamelessly exposed herself to him. This amused me but not him.

Towards the end of the day one of the clauses in the contract concerned payment of initial funds. Dr. Schiff suggested we move on and leave that to the end. This surprised me but we all agreed and continued. Around 6p.m we reached the end of the contract and Herr Brauner was ready to sign. At this moment, Dr. Schiff said, “No!” We all looked at him in amazement.
“I want a check just now for 30% of the sale.”

We were all stunned and Artur Brauner got up to leave. I rushed over to him and his architect and ushered them into an adjacent room. I told him I did not know what was going on but please sit down and I will find out. He said he was dining that evening with the Israeli ambassador and had to soon leave. I rushed next door to see what was going on. Schiff was adamant about the check.

I asked my Lawyer, Herr Jacob, what was the normal procedure in deals like this. He explained that usually a binder was paid at the time of the signing and that the deposit would be paid a few weeks later. Usually the binder would be paid the next day. I asked if this could be cashed on receipt? He said no problem, as he could write a check to cover it.

I explained this to Schiff and said that tomorrow we could get the binder and he could get a check for 50% of it. When he heard this, he brightened up. Apparently, having a check of any amount was important to him. I went next door, just in time to stop Herr Brauner from leaving. I said that we had a deal and he came back in, took out a beautiful fountain pen and with a flourish, signed his name to the contract. He then left. Interestingly he never brought his own lawyer and his architect said nary a word.

When they had gone we started to celebrate. Herr Jacob produced a bottle of champagne and I opened a bottle of whisky I had purchased in anticipation. Herr Jacob told me that if he were the buyer, he would never have signed that contract. Why, I asked? He explained that this contract was ironclad and could not be broken. He was proven correct a few weeks later when two top judges called him to congratulate him on the contract. Herr Brauner had twice tried to break it with no success.

We decided to go out and continue our celebration but Dr. Schiff demurred, as he was kosher etc. The next day we met up in the office to collect his check. Frau Jablonski was in attendance wearing normal clothes. As she served Dr. Schiff his coffee, he suddenly tugged on the hem of her dress and she blushed. I surmised from this interchange that the night before he did celebrate the deal and his meal, like mine, wasn’t kosher.

A year later, the deal was finished and the funds were disbursed. The day they arrived, I went out and bought myself a brand new Jaguar XJ6.
I started reading when I was 3. I say that not to evoke any particular reaction in the reader, but just to make clear the fact that I've been reading for a lot of years---nearly 59, now.

For over half of those years--- thirty-one and a half, to be sorta-exact--- John Atkinson has been at the helm of Stereophile magazine.

Think about that for a moment: that's as many issues as there are days in a year, each and every one of which required scrambling for content, had last-minute crises of some sort ('cause there are always last-minute crises), required assuaging existential angst of one writer or another, all the while wrangling with some sort of corporate hierarchy.

The stack of 49 issues of Stereophile from the '80s and '90s (shown below) constitutes less than one-seventh of the number of issues that have come out during John's reign. And this stack alone is over 15,000 pages.

Yikes. It makes me tired just to consider it.

As I suppose is obvious---and quoting my own Leebens' Law of Life, here--- things change. If we look down the masthead of S'phile '93, we see a number of once-familiar names that are now MIA. At least from Stereophile.
Corey Greenberg? The one-time bad boy of high-end audio left S’phile to edit Audio right before its demise (coincidence?? That’s mean...) , then went on to a Gadget Guy stint on the Today Show, where his most influential piece was, oddly enough, about wet shaving?!? That was a good while ago. Where is he now? Dunno. I suspect that he’d make an annoying 50-something.

Ken Kessler? Pretty much Mr. Audio for mainstream media in the UK, and more importantly, the Watch Guy for a zillion outlets in the UK and America. In North America, he occasionally writes for Copper and for SoundStage! --and you might catch him zipping through CES, as seen in the surreal pic from the Venetian, below.

Lewis Lipnick? Everybody’s favorite audiophile reviewer/bassoonist may be out of audio reviewing, but is still bassoonist and contrabassoonist at the National Symphony.

Sam Tellig? The Audio Cheapskate turned Sam's Space has retired from writing, although he periodically berates his old friend/nemesis Roy Hall, and I periodically try to persuade him to get back into the game. He also regales me with unprintable anecdotes.

Martin Colloms? These days, Martin edits the subscription-only HiFi Critic in the UK, and periodically pops out a new edition of his massive reference work, High Performance Loudspeakers. He assures me that the 7th Edition is coming...soon.

Steven Stone?: Former Boulderite turned Denverite Steven is busier than ever with TAS, Audiophile Review, Home Theater Review, diving, picking, recording---he’s a busy guy, for sure.

John Crabbe, Alvin Gold, Igor Kipnis? Sadly, all three of these august authorities have passed on--and likely a number more on the masthead, of which I'm unaware.

Robert Deutsch? The ever affable Bob is still writing for Stereophile, thankfully...

...as is Editor John Atkinson. Thirty-one and a half years on, going on 400 issues, Lord knows how many pages, much less words--John keeps going.

And we're grateful for it.
David Myles is a Halifax-based singer/songwriter with a smooth and tender voice, a vaguely retro look and sound, and an insatiable love of many types of music. At 36 years old, he’s already put out an impressive ten albums of original material.

His first effort, Together and Alone (2005), proves a sophisticated start and offers a strong hint of the quality to come. “Could Have Fooled Me” is a wistful, blues-inspired meditation on life and loneliness. The spare guitar chords, plucked rather than strummed, provide a sufficient framework while letting the expression of the lyrics really shine through. Notice the way some lines blend into others, preventing the predictable trench that so many pop writers fall into.

http://www.youtube.com/watch?v=KMmcMZORUq0

On the second album, Things Have Changed, from 2006, there’s already evidence of Myles’ wide-ranging tastes and endless musical curiosity. The title song sports a Latin jazz sensibility. Even his voice seems to morph to fit the style - breathier, grittier, with longer diphthongs in his diction. The horns and drums make this track feel like a cross between Al Green and Rubén Blades.

http://www.youtube.com/watch?v=_8VcsSnUnA
You’d never guess this was the same man who sang “Could Have Fooled Me” if these were the only two Myles songs you’d heard. But in the context of his whole career, they both fit with his overall musicianship, ear for arrangement, and chameleon-like stylistic flexibility.

Myles demonstrates his compelling rhythm guitar skills (here with frequent collaborator Alan Jeffries) on “Cape Breton,” a song from the 2008 album *On the Line*. A large percentage of Myles’ songs are about romantic relationships, which is normally a deal-breaker for me, a guarantee that I’ll be bored quickly. But Myles takes so many approaches, both lyrically and musically, to the profoundly human condition of love that I’m endlessly diverted by what he has to say. Efficiency is one of his trademarks. He does a lot with very little here: the strummed rhythms, a limited melody of repeating descending phrases, the basic but universally appealing concept of escaping on vacation:

http://www.youtube.com/watch?v=zBNtBegqmF4

*Turn Time Off* (2010) may be Myles’ strongest and most interesting album, both because of the writing and the production values. In “Lean into the Wind,” Myles gets the textures just right, with long melody lines over a chugging guitar rhythm reminiscent of Johnny Cash (who he’s an admitted fan of). The lyrics have a philosophical bent that you might find in a Cash song, too. Life keeps on going, so you might as well go with it.

http://www.youtube.com/watch?v=vOzl3dcHViA

Country music is an obvious long-term inspiration for Myles -- the old-fashioned, primordial kind that still sounds more folk than big-business. “Don’t Look Back,” from the 2011 album *Into the Sun*, uses close miking and minimalist accompaniment of repeating bass octaves to help achieve an out-on-the-back-porch effect. Again, he’s got that Johnny Cash sense of restless motion:

http://www.youtube.com/watch?v=UOZfaO42zaU

Much of Myles’ output demonstrates how much respect he has for fellow musicians, trusting in them to help shape his sound in whatever style he’s exploring at the moment. For the 2013 album *In the Nighttime*, he relied on a friend with a skill set quite distinct from his own: the Canadian rapper Classified.

You might not expect the tough, urban beat of rap to nestle into the nooks and crannies of Myles’ cool jazziness and roots-music patina. But it turns out to be a great match. “How’d I Ever Think I Love You” is one of the songs produced by and featuring Classified. The way it combines pop with rap is worthy of Pharrell Williams or Beck on certain days.

http://www.youtube.com/watch?v=rorGQ5RALg8
This collaboration went both ways: the song “Inner Ninja” appeared on the rapper’s self-titled album *Classified* (2013) with Myles as a featured artist. The single won a Juno award and broke rap sales records in Canada. The two put out another single, “Work Away,” in 2016.

Despite that success, Myles has expressed some frustration with the difficulty of reproducing rap-inspired tracks live onstage. He longed to return to a bygone straightforward style of music that he could just walk out in front of an audience and play. Retro was the name of the game.

With his newest album, *Real Love* (2017), Myles explores yet another aspect of his musical psyche and yet another era of popular music. This time, ’50s rock and roll gets its due, with Myles paying tribute to the likes of Buddy Holly, Eddie Cochran, and Chuck Berry. With a low, silky voice and a bass-intensive production aesthetic (by Dan Ledwell) that spotlights the grinding rhythms of rockabilly, Myles really commits to his new persona. Here’s the single “Real Love”:

[http://www.youtube.com/watch?v=yBsyfuVSXVE](http://www.youtube.com/watch?v=yBsyfuVSXVE)

Persona is the operative word. Even the packaging of this product -- the album cover, the videos, Myles’ signature sharp suits -- has been kicked up a notch, as if Myles is looking at this album as a new career level. Or maybe the particular artists he’s paying homage to on this one inspired a grander presentation. Whatever the reason, Myles keeps evolving.

He has dropped hints that his next album will be French. The possibilities are très extraordinares.
In 1926 Nathaniel Adams Cole was 7 years old and US Route 66 was established as a part of the US Highway System. I don’t have to go into where it started and where it went because that lore is as American as a Moon Pie. The most iconic roadway in our country was completely paved when Cole was 19 and it spawned motels, road side attractions, saloons, diners and complete towns as quick as you can spell entrepenuer..um entrepruner..uh huckster.

The Fed US 40 took over most of it. I used to drive that route as a truck driver and a traveling gnome. There are still portions of the 40 that have signs designated ‘Historic 66’ and there are sections where cities like Albuquerque claim you can take their exit and drive along the old highway and hey, stop for dinner and shopping. Most of these cases have the validity of a politician running for office..or cover. But, you are in the general vicinity. As you drive on the 40 through New Mexico, Arizona, and into California you drive through towns of song like Gallup, Kingman, Needles, Winona, OK City, Barstow and San Berdino (cali pronunciation). So you know you’re close. And if you’re observant you can see not far off the freeway in countless places the remnants of the old girl, abandoned buildings and lives.
In 1946 Nat Cole recorded and made famous a song that everyone covered. You can’t be in a Texas swing band without knowing this song. It’s clichéd but I add it here because Nat was still behind the piano for this recording with the trio and we should talk about that.

http://youtu.be/dSzGoJcVVg0

Oh man. That’s Irving Ashby on the guitar, Joe Comfort on bass, and Joe Costanza on conga. Nat was known first and foremost as a singer but he always considered himself a piano player who maybe could sing a little. In fact he once said he thought his singing was ‘bogus goods’. “I’m not really a singer; I couldn’t compete with real singers. But I sing because the public buys it”. Wow.

Oscar Peterson, no slouch at the ivories himself, claimed Cole as an early and important influence. If you love the piano, Clint Eastwood (yes, that Clint Eastwood) directed a documentary on the instrument called Piano Blues and it’s a gas to watch. In it he has an interview with Ray Charles who pointed at Art Tatum, Oscar Peterson, and Nat Cole as the three greats, and specifically talked about his early years when he “ate, drank, and slept Nat King Cole”. High praise from a pretty good tinkler.

Here’s a nice example from his TV show The Nat King Cole Show. This is “Tea For Two” from 1957 and by that time he was so famous for his singing few of his fans even knew he could play so this was a novelty for the audience.

http://youtu.be/OCEcDhF2LS0

If we go back a little this all got started in 1944 when he wrote and recorded “Straighten Up and Fly Right”. Unfortunately he sold the rights to that song for $50 and it became a #1 hit on the Harlem Hit Parade that year. He also first recorded a little Mel Torme number “The Christmas Song” which in a later incarnation is still a holiday classic, second only in sales to Der Bingle’s recording of Irving Berlin’s “White Christmas”.

1945 was the first year for Billboard rankings and the Nat King Cole Trio had the original #1 spot and stayed there for 12 weeks. That same year they appeared on Bing Crosby’s Kraft Music Hall radio show and did so well he was Crosby’s summer host a year later. The trio then appeared on radio for Ed Sullivan, Garry Moore, Milton Berle and Perry Como. The 26 year old Cole was having quite a year.

In 1946 he met Maria Hawkins Ellington, a strong willed and intelligent woman who became completely dedicated to Cole’s career. The studios had been trying to get Nat from behind the piano and sing more but it was Ellington who was adamant that he stand up and become the singer, despite being hailed as one of the key greats, and it was Maria who had the influence over him to make it happen, and work. As this played out there was an outcry from the diehard jazz community, especially jazz publications like Downbeat and Metronome. Cole, as great as he was as a player showed no nostalgia for the keyboard; he was making money. “For years we did nothing but play for musicians and other hip people,” he said. “..we practically starved to death.”

See, despite Cole’s disdain for his voice he was a classic crooner, a beautiful master of a phrase with flawless enunciation and perfect pitch. His recordings during the late 40’s and the 50’s are some of the most perfect and iconic love songs ever recorded.
In 1948 he married Maria Ellington. Like successful Americans they moved to a nice place and started having kids. At the time if you were a black jazz piano player who sang a little you were pretty much left alone, even though you still had to play only in certain venues, stay at certain hotels, and eat at certain restaurants. But if you started making real money and bought a house in a well-to-do neighborhood the creeps came out.

The Hancock Park section of Los Angeles was a classic Hollywood haven complete with movie stars, moguls and politicians and was segregated, complete with a legalized document. The good white people of Hancock Park tried suing and actually tried to buy their home. When that didn’t work, they killed the family dog with a piece of poisoned meat and burned the N word into their front lawn. Shots were fired through the front window and a sign painted N Heaven pounded into front lawn. The kids remember all this shit. One of them recalled that a neighborhood bitch invited Nat to one of her parties to perform. She was incensed when this uppity SOB sent her a bill. Good on ya Nat.

Nat and the family were going nowhere and the house wasn’t sold until years later. When Maria sold the Hancock Park home she made certain it was sold to an African American couple. That Maria.

In 1950 Cole recorded “Mona Lisa” which he didn’t like. Written by Ray Evans and Jay Livingston for a movie, it was a B side but once shown in the movie and it hit the airwaves it went to #1 on Billboard and stayed there for 8 weeks. It won an Academy Award for Best Original Song and was inducted into the Grammy Hall of Fame in 1992. Cole decided it was one of his favorite recordings.

Also in 1950 Nat King Cole went on his first international tour, a monumental success which he enjoyed thoroughly. Cole was described by everyone as a genuinely nice human being and he loved the travel and meeting people from different parts of the world.

In 1951 the trio was disbanded although Cole would use the fellas in the studio and on his TV show. He recorded “Too Young” and “Unforgettable”, probably his most well-known song. “Too Young” went to #1 but “Unforgettable” never went above #12. !!

In 1953 Nat suffered his first serious illness. He had to undergo stomach ulcer surgery and was forced to cancel a national tour. But he recovered thanks to the doctors and rest, and still charted 7 songs that year including “Pretend” which went to #2.

1954 he charted five singles and “Answer Me Love” went gold. By now he had Nelson Riddle doing his arrangements and together they recorded Nat King Cole Sings for Two which became a model for Frank Sinatra’s classic and haunting In the Wee Small Hours theme album.

In 1955 Nat King Cole had 8 songs that charted in the top ten. But as much as America loved his music they weren’t really ready for him.

In November 1956 he was given a TV show by NBC titled The Nat King Cole Show. NBC, to their credit, gave the show every chance for success. They had an international recording star and Nelson Riddle did the arrangements. The production values of everyone involved, especially Cole, were top notch. The best talent of the day worked for small change to help Cole, a list that included Frank Sinatra, Sammy Davis Jr., Harry Belafonte, Tony Bennett and Eartha Kitt. The show’s regular vocalists were The Mills Brothers. Cole worked his ass off, but the show only lasted for 64 episodes,
ending finally in December 1957.

They never found a national sponsor. They would have local sponsors like Rheingold Beer in Hartford CT and Colgate toothpaste in LA, but no national sponsor would take the risk of having a black man associated nationally, especially in the South, with their product. Viewers in the South would call local stations and complain because the stations would have “blackouts” during his show. Unbelievable. Nat was aghast and bitterly disappointed. I’m with ya brother. Cole himself pulled the plug on the show stating “I guess Madison Avenue is afraid of the dark.” Just too damned early.

In 1956 at concert at the Birmingham Municipal Auditorium in Alabama, during the third song of the evening “Little Girl”, a group of white knuckleheads stormed the stage attempting to kidnap Cole. Bedlam ensued, including a fight between uniformed cops and non-uniformed security who didn’t know who was who, and Cole was grabbed and thrown to the floor. He hurt his back and had to stop the show and find a doctor. Before he left he spoke to the audience, in obvious shock. As much of racism that he had suffered in his life, career and home, he was such a nice guy he was shocked that this could happen to him when he thought he was performing for his loving fans. He never returned to the South to perform, not even his hometown. Cole addressed the Republican National Convention that year and the Democratic version in 1960 decrying the deplorable state of this kind of behavior.

By the late 50’s his career as a major star was in a decline, as was a number of the crooners’, but he still had an audience. In 1958 he played the role of W.C. Handy, the father of the blues, in Looking Back, a movie on which Handy was a consultant. By the way, Handy was born in Florence Alabama in the Muscle Shoals area. In 1960 Nat performed for the Kennedy inauguration and produced a Broadway revue which resulted in an album titled Wild Rose which was his first top ten album in three years.

His 1962 recording “Ramblin Rose”, reached the top ten, #1 Adult Contemporary and #2 R&B.

In 1963 he made “Those Lazy Hazy Days of Summer” which became his final charting single.

Plans were made for a 1964 retrospective jazz album but it was never made. In December 1964 Nat Cole was admitted to St John’s Hospital in Santa Monica. It was lung cancer. Nat smoked three packs of Kool menthols a day, rarely seen without a smoke in his hand. He never had real faith in his talent or his voice, and believed until the end that the smoking gave him that rich tone.

Cole started an intensive regimen of cobalt and radiation treatments and he recovered enough to do the movie Cat Ballou and record the album L-O-V-E. He said he felt great, and even days before his death he made public appearances. In January 1965 he had an operation to remove a lung but the cancer had spread too far. On February 15 1965 Nat passed away at the tender age of 45.

Nat ‘King’ Cole was buried in the Freedom Mausoleum at Forest Lawn in Glendale. The funeral was attended by about an eclectic group as can be imagined, including Robert Kennedy, Rosemary Clooney, Frank Sinatra, Jack Benny, Governor Pat Brown, Count Basie, Steve Allen, Jimmy Durante and Leonard Feather.

Nat Cole’s career barely lasted 20 short years, but in that time he collected 28 Gold Record awards and was inducted into every Hall of Fame imaginable including the Rock and Roll Hall of Fame as an Early Influence. Cole was an inspiration as a man and a performer. One of the few my Dad and I could agree on. That’s saying something, trust me well.

http://youtu.be/TnEtvtmFcg0
Research for this column included two wonderful documentaries, *Nat King Cole- Afraid of the Dark* and Clint Eastwood’s *Piano Blues*, and a biography titled *Nat King Cole* by Charles River Editors.
Starting in *Copper* #40, there have been several occasions when we've looked at the activities of two companies that historically have been truly important to the worlds of audio and music—though not so much lately: Thiel Audio and Gibson Brands, commonly known as Gibson Guitar. News from these companies has often been dismaying, providing many forehead-smacking moments. As with Sears, their demises have seemed inevitable, forestalled by a lengthy succession of questionable business moves. It's been like watching a slow-motion train wreck.

For Thiel, the end has come—or, as Ted Green bluntly put it in his Strata-gee newsletter, "Thiel is toast". The company struggled following the death of designer/cofounder/namesake Jim Thiel in 2009, and following the sale of the company by cofounder Kathy Gornik in 2012, the company of legend went away, piece by piece: unique topologies, custom drivers, bespoke woodwork—all disappeared, replaced by generic off-shored products and ultimately, a small Bluetooth speaker. Five CEOs in five years couldn't have helped.

Even if you didn't love the sound of Thiel speakers, you had to admire the company. Jim was a kind, patient man with a brilliant analytical mind, and was capable of articulating his ideas better than any engineer I've ever known. His brother Tom left the company years ago, but was responsible for the company's legacy of amazing cabinetry and inventory of exquisite woods and veneers. Kathy, cofounder and Jim's partner, was a savvy, driven businessperson who kickstarted sales by driving a speaker-filled station wagon all over the country. As one of the few female company heads in consumer electronics (much less in the little world of the high end), Kathy was constantly scrutinized and recruited for leadership roles in all manner of organizations. I'm proud to say she was one of my mentors.

Anyway: gone. All gone.

(BTW: the heading is the logo of the OLD Thiel...because that's the one we mourn. Not the Nashville-based nothing.)

And Gibson? Unlike Thiel, the embarrassment continues. Gibson took their usual inflatable pavillion to CES, and elected to forgo the musical industry showcase of NAMM. So: we looked at Gibson's string of woes in #45, #46, and #48—and to update with the latest mess, the litigation just keeps on coming.

It's exhausting to watch, and is painful to see for anyone who actually ever gave a shit about any of the companies that make up the vast, disparate Gibson empires.
Again, from the relentless Ted (and God bless him for paying attention): deals broken, and whatever.

We'll let you know what we know, when we know it. Meanwhile: don't take any wooden conglomerates. ;->
John Seetoo: As you’ve become a recording engineer yourself, do you feel that your choice of occupation was predetermined by your environment and family?

Tom Fine: No, because I had a nearly 30-year career as a journalist and always did sound work "on the side" until recent times. I wisely listen to my mother's advice and avoided a career the record business. I worked at a NYC recording studio as a teen and the engineers there told me not to think about any career until I went to college and figured out what I liked. I thought about getting into video post-production, because there was more money in that business than music recording, but the TV studio at my college was primitive and the guys (all guys) who ran it were not welcoming to a freshman who had worked at a more modern cable TV production facility in his hometown. In contrast, the "alternative" newspaper on campus was very welcoming to a freshman with only a little experience in the world of journalism (plus the male-female ratio on the staff was about 50-50). I immediately found my "home" at college and that led me to a journalism career, most of it spent as Managing Editor at Beverage Digest, a trade journal covering the beverage business.

I got into doing audio work through my older brother, Matt, who was one of the first employees at Audible. In the early days, Audible produced a lot of original content (Podcasts before the name was invented). They needed editors who could use this newfangled Soundforge software and crank out work quickly. I had just bought my first Windows PC at home, this was around 1996. Audible gave me a licensed copy of Soundforge and started feeding me work on a regular basis. I got very good at waveform editing and the various format/file-management aspects of digital audio production. I then started acquiring and restoring better analog gear so I could digitize my own tapes and records, to
play them in the then brand new digital file players. In fact, this makes me remember my first CD-ROM burner, which cost about $300, from 1997 or so. Between CD-ROMs and Napster, I could clearly see the end of the business model for the record companies years before it imploded, so I was then REALLY glad I took my mother's career advice!

Anyway, at about the time I had amassed some good tape machines and disc-playback gear, and had upgraded my computer audio workstation, I got a job digitizing a massive collection of recordings for Poets House in NYC. They basically digitized their whole audio library and loaded it into iPods and computer kiosks, where one could search for a poet or poem and hear recordings while seeing the words on the computer screen. This job took several years and provided money to keep upgrading the studio. At the same time, computer audio came into its own. And more transfer work started coming in, and it built up from there.

I got involved with remastering Mercury Living Presence material when Universal Music/Decca Classics, the current owner, decided to put the catalog back into print, via value-priced box sets. I reached out to them and said, let's bring some new material into print to fill out these box sets. Between the three box sets, about 90% of the original Mercury Living Presence catalog is in print. Of course, I'd love to see the rest of it get remastered and in print.

JS: Your own bio cites your re-mastering work and gear review articles you have written. What are your favorite projects that you have personally engineered, and if you had an unlimited budget, what would be your dream setup for a personal recording studio?

TF: I've enjoyed all of the projects I've worked on, for one reason or another. The Mercury Living Presence work is most near and dear to my heart. In particular, I enjoyed writing my parts of the booklets for Box Sets 2 and 3. Technically, I very much enjoyed remastering the Marcel Dupre box set because it was challenging and because the results have been very well-received. I used a revolutionary new system called Plangent Process for the tape transfers. Plangent was invented by a guy named Jamie Howarth. It works this way: the tapes are played back on a customized Ampex ATR-100 fitted with special heads and Plangent-designed electronics. Along with the audio channels, the Plangent system recovers the high-frequency bias signal from the tape and stores that on a separate digital track. The Plangent software then isolates and locks to the bias signal, effectively eliminating all the mechanical distortion (wow, flutter, scrape-flutter) that cause time-domain errors in analog tape recording and playback. It basically takes the problems of tape (aside from the hiss, which is still there) out of the equation, and brings the sound back to what came out of the microphones. The organ-music fans have loved the Dupre box set because getting rid of those time-domain distortions clarified both the actual musical notes and also the intonations and techniques that Dupre employed.

As for a dream setup for a studio, I'd have to really win the lottery because there would be quite the construction budget. I'd want a very well-tuned room that's designed for big, full-range speakers and moderate listening levels (85 dBSPL peak levels). I use Amphion Two18 near-field monitors in my studio, and also listen very carefully on my "big system" in the cathedral-ceiling living room, which features the same B&W 808 monitors that my mother used to make the Mercury Living Presence CDs in the 1990s. In the studio, I use a Lynx HiLo as my digital interface with a Benchmark power amp driving the Amphions. It's a very low-noise/low-distortion system designed for quick and accurate reproduction at moderate listening levels. The living room stereo has a Benchmark DAC2 digital interface and I use either a Benchmark or Aragon power amp to drive the B&W's. I would call the B&W's quite quick and clear for such large speakers moving a lot of air. I can again use moderate listening levels, so I don't get fatigued working on either system. I know too many old engineers walking around with hearing aids, I'm very careful about SPL exposure. I'm not sure how "different" I'd want the sound tonality to be on my "dream system" vs. what I have now, because I've
been able to get good results and happy clients so I figure I must be hearing things effectively. But, as all people interested in audio technology know, there is always room for improvement and some new technology worth investigating is already headed down the pike.

My main winter project is going to be dismantling and rebuilding, especially rewiring, my studio. So hopefully I'll get closer to my "dream studio" with very little money outlay! My main purpose, though, is to simplify signal flow and workflow. The studio has grown and changed over the past 10 years, with each "layer" of change kind of set on top of the previous. Time to gut-renovate it.

Hopefully, you can tell from my answers that I'm very proud of my parents, and feel lucky to be their son. They were smart, creative people, and both had a good sense of humor (very different, with my father being from Queens and my mother being from Texas, but that was part of the fun because they made each other laugh). I'm especially grateful that they passed on their love of music and sound, because careful listening has been a source of great joy for me. I do listen to technical aspects of recordings; it's an area of interest and I understand it to a certain extent. But I try to make sure to go beyond that and hear the music itself, and let it do its thing to my heart and soul.

[Thanks to John and Tom for an amazing interview! It's been fascinating to learn more about the work of all three Fines.---Ed.]

[Header photo is of C. Robert Fine at the Westrex recording console at Fine Recording Bayside, Queens, which was originally the Everest Records studio. All photos courtesy of Tom Fine.]
There is no magic to good cables; it is adherence to strict design rules that also encompass those "magic" tertiary variables.

In the three-part series, Cables: Time is of the Essence, [Part 1 Part 2 Part 3--Ed.] we talked about signal distortion in audio cables. The most demanding variables in cable design involve the time-related distortions the ear is most sensitive to.

Good cable design mitigates time-based issues through the audio band. This article covers the journey through the design process to arrive at a satisfactory design. I must stress all quality cable designers have to work with the exact same variables to solve problems at audio frequencies. Distortions can’t be totally eliminated, so every cable is a compromise of some sort.

**RCA Design Brief**

RCA cable provides the most pristine electromagnetic properties possible due to a seemingly simplistic design.

1) **Conductors**

There is a lot of mystery around copper. The grains, or the molecular arrangement of the crystals themselves, were recently found to not be what we thought.

The web article on Phys.org “Fundamental breakthrough in the future of designing materials” says, “... granular building blocks in copper can never fit together perfectly, but are rotated causing an unexpected level of misalignment and surface roughness. This behaviour, which was previously undetected, applies to many materials beyond copper and will have important implications for how materials are used and designed in the future...”

The decision to use copper is based on several factors, none of which was price. Copper offers the best material for affordable cables, as well as a significant level of performance in superior electromagnetic designs. Far more expensive materials in lesser designs won’t work, and far more expensive materials in superior designs won’t work... for most of us anyway.

Copper is available in several process treatments and after-process treatments:

- Electrolytic tough pitch copper (ETPC)
- Oxygen-free high thermal conductivity copper (OFHC)
- Ultra-pure, Ohno continuous casting copper (UP-OCC). What is often called long-grain type
- Cryo treatments. Used to improve copper’s physical properties only
- Grain direction options. Music is AC. Which polarity would you like first, and at what frequency?

Belden offers the three fundamental copper grades; ETP, OF, and UP-OCC, as they sound different in the exact same electromagnetic R, L, and C referenced design. (Impedance, inductance, and capacitance.) We don’t know why they sound different, but they do. Belden does not offer options that cost more, but offer no benefits that I can hear as a designer. Sorry, but I’ve yet to hear cryo treatments (which are intended to improve the wire’s physical strength or grain direction) change the sound.

So why copper? It has a very low direct current resistance, a reasonably deep skin depth to manage current coherence, is pretty high in tensile strength for processing, and in most applications resists severe oxidation. The grain structure is clearly visible in form, but that alone is not what makes the different grades sound different. In fact, these traits from drawing the cable do not have as much effect on the sound as you would be led to believe. Belden’s manufacturing process allows the cable to be used in any direction, as the wires grains all go the same way.

Solid or stranded wire? This, at least, is easy. Solid wire wins every consideration. It is better suited to the way audio cable is used. It is cheaper. It is easier to process. It allows for better terminations. It has fewer of the gremlins that I call tertiary variables (stuff there isn’t a measurement or calculation for).

**Conductor Size**

So we’ve now chosen solid copper wire. The size of this wire sets the foundation, since the cable’s structure is supposed to allow a conductor to be as near zero R, L, and C measurement cable as we can design.

For the RCA cable, we want as small a wire as we can process as this will force the best current coherence through the wire, i.e. the same current magnitude at all frequencies. The exact skin depth calculation is a tool we use to gain the knowledge to reduce the wire size in audio cables. Skin depth is covered in more detail in Part 2 of the overview.

RCA cables terminate into a theoretically infinite (47K-120K or there about) input resistor. When impedance is so high and current is so low, it is effectively an open circuit. The most logical solution
is to use as low a diameter of wire as possible. However, a wire that’s too small can’t be reliably terminated, might permanently stretch too easily, and may break if there are any surface imperfections.

Calculations and testing resulted in the selection of a 0.0176” diameter wire for Belden ICONOCLAST. This is half the diameter necessary for an 18-mil skin depth at audio, so there is greatly improved current coherence. (Remember from the overview that skin depth is dependent on frequency. The smaller the wire, the larger the inner-current magnitude relative to the surface current.)

2) Dielectric material and geometry

How do we retain all that our carefully selected conductor can provide? That’s easy, just stick it in air and find an infinitely low ground potential for our unbalanced / single ended wire! Air is free, and by far the best dielectric to have, but packaging air with a cable isn’t as easy or cheap.

How do we use air as a dielectric? I take inspiration from semi-solid-core-dielectric radio-frequency cables. These partially suspend a wire in a tube with a spirally wrapped thread. However, tweaking the design to suit audio frequencies is difficult. The audio signal is very sensitive to the dielectric effects of the plastics near it, so the beading thread that maintains the air gap in the dielectric tube has to be carefully chosen. The picture shows the beading around the wire, which is a glass thread coated in pure TEFLOW®. [NOTE TO ED: The picture mentioned is on page 4 of RCA and XLR Design Brief REV8.pdf. It’s quite small, so the original file will be needed.] Why the glass? It isn’t possible to make a solid Teflon bead at this size, and maintain dimensional linearity. The strength of the glass also allows the beading to be processed at production speeds.

So why Teflon? First, it has the lowest dielectric constant of any solid plastic. Its high tensile and elongation properties mean it is strong and durable in even thin walls, and allows the bead to stay round even under side-wall pressure. Maintaining the dimensions is critical, as there isn’t a lot of room to play with in this tube, since there is only one optimum asymptotic wire size based on a given tube inner diameter.

The ratio of the tube inner diameter (with an 80% air void) to the inner braid surface will determine the capacitance. Maximizing the air content will improve the efficiency of the dielectric so the smallest loop area for inductance will also yield the smallest measured capacitance.

As the wire gets bigger inside a given tube, it crowds out the air. We could drastically increase tube inner diameter and wire size, but we want to hold inductance and signal coherence in check. Inductance is the loop area between the wire and the inner braid, and that needs to be infinitely close, the opposite of capacitance. For a given tube size, we want the maximum air void, and the smallest possible wire-to-braid distance.

This means the conductor wire size has to be as small as you can process, with the desired capacitance. As the tube gets larger, capacitance will drop but inductance will rise, and the opposite with a smaller tube. The design target is 11.5 pF/foot on the bulk cable, and assembly capacitance would be 12.5 pF/foot.

Inductance isn’t as critical as current in high-impedance cables, in which current is effectively ride time limited by inductive reactance. This is near zero. In my listening test, cable with near zero on both L and C attributes sounded best, and a balance needs to be considered. The cable isn’t big or small; it is what it needs to be to work. The wire size we start with sets this all into motion.
3) Shield material and design considerations

We have a core tube and know the electricals. Now what? The braid.

This is much more important than people think, and for differing reasons than people think. No, it isn’t shielding. True, a double 90%+ braid has 90 dB RF shield properties but, I sure hope your equipment isn’t that sensitive to RF. Foils are much better and more economical for RF than a single 80% braid, and reach the 90 dB mark far more cheaply.

Lets look at how unbalanced circuits work. They share a ground... or do they? They are supposed to share a ground, but they don’t. RCA unbalanced cables use the chassis as a ground to the wall outlet, or in some cases, is floating, but the reference between the grounds is still there.

In all cases, there is that pesky thing called the shield between the ground points on every piece of RCA equipment you use. Though that shield wire should drain away stray current, it has resistance of its own, and that resistance creates a ground potential difference. This causes current to flow between the two end grounds, creating a voltage in the center wire of the cable. The hum you hear as a result is called SIN, Shield Induced Noise. We can reduce this resistance in the shield by using two 98% copper braids. This is expensive, but the right thing to do. The lower the braid direct-current resistance, the better the SIN rejection.

However, these braids will not shield magnetic interference. You need a low-permeability shield to block low frequency magnetic waves (anything below about 1 MHz starts to have a considerable effect on the electric field). If an RCA cable is to shield magnetic fields, the shield would allow a magnet to stick to it. This is an indicator that the material is “influencing” magnetic field flux lines, both into the metal and out in the air. We can manage the SIN noise with a good ground, but true extraneous magnetic noise is still tough to manage with unbalanced cables.

4) Jacket design and material considerations

The Belden ICONOCLAST uses a Fluorinated Ethylene Propylene (FEP) jacket, for good reason. FEP is the most chemically inert material there is, protecting your cables from chemicals, and UV-exposure through those nice picture windows in your house. Lesser plastic material isn’t as stable, or inherently flame-retardant. Nor can many materials be used in thinner walls.

Plasticizer migration out of the cable, especially near heat, is a real issue. A polyester or nylon carpet can take on the color of your cable laying on it! FEP does not have this issue, and will look nice for decades to come. Yes, it costs more, but these cables are an investment into the future, and can follow your system several steps above where you may be now. Based on durability, stability, and inertness to solvents, FEP is the best choice for the long haul.

RCA Summary

Knowing that RCA cables aren’t as “shielded” at audio as we think, what can we do about that? If you don’t have an interference problem, you’re good to go! RCA is a great-sounding cable with good fundamental electromagnetic design. This is why it was created. It does have issues with magnetic noise immunity, though.

This is where XLR cables come in, except that they are far, far harder to make as good as an RCA electrically. We will examine the design of this balanced cable in the next part.
I Got Your 3-Way Right Here

FEATURED
Written by Charles Rodrigues
Our little world is categorized as "High-Performance Audio" (HPA) by the Consumer Technology Association, the group that puts on CES every year, and I think that's a far better term than "high-end audio" (which brings to mind Richie Rich and lighting Cohibas with c-notes). For quite a few years now, we've kvetched about the reduced presence of HPA at CES, to the point where last year the audio exhibit floors at the Venetian shared space with the likes of Simmons Mattress and the AARP. Go on: make your own jokes. Trust me, those of us in the biz did.

Apparently, the cries of outrage were heard. This year, "our guys" were condensed down to only the 29th floor (with the exceptions of Bluebird Audio and Lamm, up in the high-roller suites on 35), BUT there were no irrelevant outliers as there were last year. Some of the exhibitors were obscure OEMs, but they were in audio...not bedding.

Before the show, the question on the minds of exhibitors, attendees, and press was, "Mother of mercy, is this the end of Rico?"---or something like that. The rooms on 29 were largely booked---but would anyone come? And would there be HPA at CES in 2019?

As you probably know, CES is huge. I mean, really, truly immense. The majority of the gizmos and ooh-ahh products that you see on TV and on tech blogs from CES come out of exhibits at the Las
Vegas Convention Center (LVCC), which is roughly the size of Rhode Island. Maybe Delaware. To go there is to become instantly, irretrievably lost in a bewildering maze of shiny products and even shinier spokesmodels. If you think sexism is dead, you've never been to CES. Or Las Vegas in general.

Far beneath the HPA world enshrined in the attic of the Venetian, in the subterranean bowels of the V, there are large ballrooms used by giant tech companies. Some of them have recognizable names, and some of them are multi-billion dollar monoliths you've never heard of until they're bought by even larger nonentities. Those are not the places where you'll find our stuff.

Those ballrooms and the other exhibit areas around the Venetian and the adjacent Sands exhibit hall draw thousands. If you had to wait on credentials in the V, this is what you faced:

Stepping off the elevator onto 29, this scene didn't fill one with confidence....
...and my initial look around 29 on the first morning of the show seemed to bear out all the pessimist predictions, including my own:
---But that's unfair. It got busier. Lots busier:

Many on 29 were veteran CES exhibitors, like VTL, Kimber Kable, DeVore, Vandersteen, Genesis, Egglestonworks, Transparent, AudioQuest, Copper contributor Roy Hall's Music Hall, and others. Old-school names reappeared: Technics, ESS, JVC, Kenwood. Relative newbies like GoldenEar and Emotiva had strong presences; both companies were founded by industry veterans (Sandy Gross and Dan Laufman, respectively). To get the full picture, the map of 29 can be found here.

The gloomy, rainy weather of the first day may have been responsible for the empty hallway shown in the second pic above. The unusual sight of a rainy Las Vegas looked like this from the Music Hall room:

In the midst of the big-boy megabuck systems was a new exhibitor from Sweden, Soundots. I was bemused by their demo, which featured their small, nicely-made $290 Bluetooth speaker...times 66! Each individual speaker can link up and attach to an unlimited number of others, which will then play in sync---and flash their colored LEDs in sync. So--- that curved arc in the picture would sell for 66 x $290=$19,140?!? The gent demonstrating the set-up was so enthusiastic and chipper that I restrained Evil Bill and played nice.

The ever-affable Chris Walker, Andrew Jones, and Kathleen Thomas from ELAC. Andrew was ill---so for once I stayed away from his demos, which are always informative and amusing. Oops. Anything to avoid a repeat of last year's deadliest-ever CES crud.
I was happy to see Copper contributors Ken Kessler and Roy Hall, and exchange a few barbed comments.
Instead of his usual big speakers and stout Pass amps, Sandy Gross was showing only GoldenEar’s new Digital Aktiv stand-mount speaker, which runs on Chromecast. MSRP was guesstimated at $2k.
ESS’s day in the sun was back in the ‘70s with the Heil-tweeter-equipped AMT-1. Rico Caudillo has revived the brand in recent years, and had a full range of speakers at CES.
Jonathan Valin seemed enraptured by the latest Magico-Constellation pairing. I didn't disturb his reverie (this time).
Ruark, a UK company seldom-seen in the States, brought their lifestylish "High Fidelity Radiogram".
Peter B. Noerbaek---the "PBN" of PBN Audio---showed two interesting projects in the Dayton Audio room: a turntable based upon an old Denon broadcast table, and an impressive and very dynamic speaker. Peter's woodworking facilities are state-of-the-art.
Raidho had a typically-impressive demo system, with full Chord electronics. My only complaint was that they were afraid to play loudly enough....
No CES is complete without a Fremer-Kessler run-in. Leland Leard stands nearby, ready to intervene....

Pro-Ject had an impressive and dramatically-lit (read: hard to photograph) room with a full range of products, not just the turntables for which they're so well-known.
Egglestonworks speakers could be seen again in the VTL room. As usual, both presentation and sound-quality were absolutely stellar.
There’s no greater pro in the audio industry than veteran Stephen Baker. Stephen is now Lenbrook's Senior Sales Director for the Americas; Lenbrook's brands include NAD, Bluesound and PSB.
Continuing the outside-the-room motif: Dan Laufman of Emotiva. Dan had a full room of stuff, also.
Musical Surroundings again showed the spell-it-out display of Clearaudio turntables first seen at RMAF. Try as I might, I couldn't include the "C".
I'm always happy to see songbird Anne Bisson, and exchange cheek-pecks. Sorry she's a bit blurry here, in the Genesis room. Besides Anne, there was some gear there from Genesis and Viola, and Gary and Carolyn Koh. I probably should have photographed them. Sorry.
There was more dramatic lighting in the Technics room, where they showed an updated SP-10 turntable, at an updated price: $10k or so.
As we reported recently in **Industry News**, the uncertain state of Classe’ was resolved by purchase of the company by Sound United---which had previously picked up the D+M brands earlier in 2017.
John DeVore's room was a refuge of good music, as usual.
Industry veterans David Solomon and Charles Whitener chat with John Atkinson and Jana Dagdagan of *Stereophile.*
Escaping the Venetian means exiting through the absurd-but-impressive lobby...
...and passing the dramatic tower....
...and eventually reaching the endless expanse of the Las Vegas Convention Center (LVCC), as seen in the header pic. The grounds outside the buildings including everything from a bunch of drifting racers (I could hear them and smell the burning rubber, but never saw them), the delightfully non-waterproof demo house from Google, the usual inflatable Gibson pavillion, and a bewildering array more.

Wherever there are headphones---and there were plenty in the LVCC---you'll find Tyll Hertsens of *Inner Fidelity*. 
Inside the LVCC was a crowd that made a certain bulky claustrophobe awfully uncomfortable. I should've stopped and asked Watson how to overcome that.
No clue what this glowing car had to do with anything. Navigating the five digit booth numbers in the Central Hall was not an easy thing, and I bounced from this thing...
...to yet another giant booth with stunning video displays....
...and yet another "smart home" display. Wish I had a buck for every time that phrase was thrown around.
This display of House of Marley products made me think I might be nearing the Hi-Res Audio Pavilion. The Marley gear was nicely designed and branded, but the turntable was decidedly toylike.
Eureka! The Hi-Res Audio Pavilion!
If it's hi-res, you'll find Marc Finer of the Digital Entertainment Group---here on the left, chatting with Ed Cherney from the Recording Academy's Hi-Res Audio Committee...
...and you’ll likely also see Cookie Marenco and Patrick O’Connor from Blue Coast Records.
Escaping the crowd, outside the complex was one of the most interesting displays (to this motorhead, anyway): truck manufacturer Paccar (Kenworth, Peterbilt, DAF, etc.) showed a big rig with a fuel cell-powered drivetrain.
Sometimes a little distance aids perspective. After the show, away from the crowds and the noise...it's all beautiful at night.

Once again, I survived. Despite my doom-saying, there were signs of life for high performance audio at the Venetian, and a number of very happy exhibitors.

I escaped before the last day of the show, avoiding the pressurized petri dishes that all airlines become after the end of the show. Thus far, no toxic CES crud---just a relatively minor cold.

Back next year? We'll see.