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AS WE SEE IT

John Atkinson

"This is offensive!" muttered usually mild-mannered Malcolm Omar Hawksford, who was sitting next to me. "I'm leaving." The good professor was right. One thousand or so attendees at the 103rd Audio Engineering Society Convention, held at the end of September in New York, were being subjected to truly terrible sound. The irony was that the sound was that of 2- and 5-channel recordings made with 24-bit resolution and a 96kHz sampling rate, being played over a colored PA system to demonstrate the future of audio, in the form of DVD-Audio.

Of course, it wouldn't be right to draw any inferences from this. It was wrong-headed on the part of the DVD Forum member companies to attempt a public demonstration under such adverse circumstances. And smaller, more sensibly arranged demonstrations for showgoers were to follow. But a shiver did run down my back: If such a major mishap can occur on such an important occasion, what else might have been overlooked by those involved in designing the music carrier to take us into the first decade of the next century? Particularly considering that the DVD Forum's Working Group 4 (WG-4) has been working hard to allow for all possible eventualities in their recommendations for DVD-Audio.

Since its inception in December 1995, WG-4 has been working with the three organizations that represent the worldwide record industry — RIAA, RIAJ, and IFPI — to develop the DVD-Audio specifications. These were unveiled at the same convention1 and include: support for pure audio, with additional-value content such as text, video, and graphics data; high-quality audio and multichannel capability; compatibility with DVD-ROM; maximum data rate equal to or less than 9.216 megabits/second, with the possibility of lossless compression allowed for; "navigaton" features that would allow the directory information to tell the hardware the contents of the disc (192kHz sampling and Sony DS1 are included among the definitions); and copy protection.

Of particular interest to audiophiles are the audio parameters: support for 44.1/88.2kHz and 48kHz/96kHz sample rates; quantization of 16, 20, and 24 bits; and up to six channels, with the possibility for reduced resolution and/or sample rate on some channels as long as neither parameter changes for any one data stream. A two-layer, 8.54GB DVD-Audio disc, for example, could offer three channels of 96/24 and two of 48/20 and play for 78 minutes. And while a separate stereo mix is envisaged, if the producers wish to omit this from a DVD-Audio, information will be included so that a player could automatically derive the stereo mix from the multichannel data.

Why would anyone introduce a whole new medium just to satisfy the demands of maybe one million audiophiles worldwide?

Also coincident with the New York AES Convention, Sony and Philips gave demonstrations of their proposal for the future of audio: "Super Audio CD." This 12mm "hybrid disc" meets the WG-4 requirements but features a "Red Book" data layer that, to an existing CD player, makes the disc appear to be a regular CD. But a second, semitransparent, DVD-like layer can be read by a shorter-wavelength laser. This layer has the capacity to carry multichannel, high-quality sound data losslessly packed in Sony's DSF format, which is a 2.82MHz one-bit data stream (see previous issues of Stereophile). The beauty of this proposal is that just one disc caters to past and future: the disc is both backward- and forward-compatible, which will enormously increase its chances for commercial success. (Why would anyone introduce a whole new medium just to satisfy the demands of maybe one million audiophiles worldwide?)

So, has anything been left out of these two proposals? It appears not, but a paper presented in New York by Bob Stuart of Meridian, who is also chairman of the lobbying group the Acoustic Renaissance for Audio (ARA), gives pause for thought. Rather than assume anything about existing technology and practice, Bob developed from first principles a set of specifications for a medium that would be capable of, in his words, "for the first time, delivering every sound to which a human ear can respond: sufficient dynamic range; sufficient bandwidth; sufficient linearity; suitable channel coding; and sufficient channels."2

Among Bob's conclusions are that an 88.2kHz or 96kHz sampling rate is higher than necessary to capture the full bandwidth of perceptible sound. A rate of 58kHz would be sufficient, he calculated. Regarding dynamic range, assuming a peak playback level of 120dB SPL means that 20-bit linear-PCM words should be sufficient, provided that no further operations were performed on the data. And if noise-shaping and pre-emphasis were used, taking advantage of the greater ultrasonic bandwidth in which to move audio-band noise, 14-bit words would be sufficient to provide full resolution. Given that lossless compression or "packing" is now feasible, the data rate that can be inferred from the above conclusions means that a DVD-Audio disc could be capable of storing six channels of information, each of which would have sufficient bandwidth and resolution to be audibly transparent to all listeners at all times with all types of music. (In an AES workshop on the audio implications of DVD, Bob Stuart emphatically made the point that he does "not think there is currently a lossy compression scheme to which we can entrust our music").

Judging the preliminary DVD-Audio and Sony/Philips Super Audio CD proposals by Bob's criteria, the first has the capability of meeting his requirements with data space to spare. But as commercially attractive as Super Audio CD is — particularly regarding the single-inventory implications for the record retailer — and as well presented as Sonny's demonstrations were in New York, the data rate does not appear high enough to guarantee audible transparency for multiple channels under all circumstances to all listeners.

So which, if either, will take audiophiles into the next century—DVD-Audio or Super Audio CD? All I can offer is that most useless of answers: "It all depends..."

1 This information is based on my notes taken at the presentations. The DVD-Audio specification is expected to be finalized by December 31, 1997.

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Barry Willis visits high-end audio entrepreneur Mark Levinson.

Jimi Hendrix: A Slight Return
Chip Stern explains how Hendrix's languishing legacy has become a family affair.

Voodoo Like You Do
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Two penn'orth
Editor:
I felt I just had to get in my two penn'orth regarding Dan Ouellette's September review of Keith Jarrett's La Scala (Vol.20 No.9, p.203). He mentions in passing "1993's Vienna Concert..." That CD is plainly marked "© 1992," and the liner notes say it was recorded July 13, 1991. I was there, and it was an appallingly hot humid evening in Vienna—even hotter at the top in the cheap seats of the Staatsoper. Just telling you so's you can keep young Dan on his toes.
Tim Conway
100747.470@Compuserve.com

Nuts!
Editor:
Jonathan Scull is nuts! But I love reading his stuff. Someday I hope to hear what he hears!
Michael Auriemma
Plandome, NY

Frustrated
Editor:
I'm a little frustrated—I received only six subscription cards in my August '97 Stereophile. I was hoping to be able to finish wallpapering my 30' by 30' listening room with these things. I think another 20 or so might do it. Any chance you could put me on the "preferred" list and put one in every other page of my magazines? Buzz Timmer
Indianapolis, IN

Shattered
Editor:
I hate to be the one to shatter Sam Tellig's illusions, but the "monkey-picked tea" he enjoyed in San Francisco (September '97, pp.53-55) may not have actually been picked by monkeys. In The Tea Lover's Companion (probably the closest thing to a definitive guide to tea from the consumer's point of view to have been published in the last 20 years), James Norwood Pratt indicates that the "monkey-picked" designation probably owes as much to folklore as it does to fact. This is not to say that the tea is not exceptional: it is grown under unusual conditions, and some of the plants are over 1000 years old. But, according to Pratt, "monkey-picked" tea "is one the merchant takes enormous pride in; more you may believe at your own risk."
Sam should try lurking on the rec.food.drink.tea newsgroup. We theophiles can sometimes be just as "tweaky" in our connoisseurship as any audiophile—but it's much less expensive!
Peter Jorgensen
Reference Department,
Lincoln City Libraries
peterj@randd.lib.unc.us

Saddle sore
Editor:
I usually look to Wes Phillips' reviews for judicious criticism and a reassuring dose of common sense, but his Versalab Zap! sidebar (September '97, p.171) caused me a sharp pain in the intestines. Wes let the home side down badly when he wrote "$39.95...a good deal." For what, a dollar's worth of brass? I could see manufacturers' jowls quiver and their eyebrows do the pole vault: "So, Stereophile thinks 40 bucks for a two-bit part is a good deal? Just wait until they see our new $9000 amplifier!"
As the top dog in high-end rags, why can't you bare your teeth every once in a while and give manufacturers a good nip in the butt for their overpriced trinkets? The High End isn't big enough for there to be consistent competition that keeps prices down, especially not when a good chunk is status pricing for Hong Kong brokers in Florida or plastic surgeons, and there's no widespread consensus that some $1000 amp vastly outperforms a megabuck wonder. (This is where the "subjective" in subjective reviewing hurts the consumer.)
Why couldn't Wes have simply said he loves his little Zap!, but concluded that it is ridiculously, if not obscenely, overpriced? $40 for something that required no engineering, no knowledge, no ingenuity, no design, no expensive materials, no testing, no...basta! My local hardware store has a $2.50 brass drawer-knob that is just as pretty and would do the same job. If this is what the High End has come to, then stop the platter and let me off.
There is something redolent of Gorgonzola about high-end prices, and Stereophile still refuses to use its influence to encourage manufacturers to keep them down. It was an all-too-rarely-asked question by Michael Fremer, in his September '97 review of the Plinius phono preamp, of whether it was worth its cost. A sensible and responsible review: good product, high price.
I'm getting saddle sores from riding my hobbyhorse, so I'll get off now.
Mark Jacobs
Tucson, AZ

Watch "As We See It" in a future issue for a discussion of pricing and the High End. —JA

Unique?
Editor:
I don't know how anybody could take Stereophile to task for reporting on its recording projects (see "As We See It," August '97, p.3). Even if the coverage is overly self-congratulatory or otherwise half-baked, which I don't think it is, your reporting on the critical subject of recording techniques is virtually unique. No other audio magazine that I know of has ever provided any coverage of the recording process, other than generalized descriptions or hazy reminiscences of old-timers from the golden age.
Stereophile's discussions of microphones from a high-end perspective, for example, are unique as far as I know. I probably learned more about recording...
A concept not relevant to high end audio? We would argue that products like the N°39 Compact Disc Processor prove otherwise. Combining the performance and functionality found in the highly acclaimed N°36 Digital Processor and the N°37 CD Transport, the N°39 represents value unheard of in a single box CD player. The benefits of shared technology are many. From the elegant Madrigal-designed loading mechanism and Closed Loop Jitter Reduction™ circuitry employed by the N°37 to the dual differential 20-bit digital to analog conversion derived from the N°36 digital processor, the N°39 enjoys a technological heritage unequalled in its class. Add HDCD® decoding capability, a high quality digital output, two auxiliary digital inputs, fully balanced analog volume control and remote capability, and it's readily apparent that true versatility and value can coexist in one remarkable component. Visit your Mark Levinson® dealer for a personal demonstration soon and listen to the sound of real value.
from these articles than from any other source I can think of. Keep it up; and now that cheap DAT decks and used professional analog machines are readily available, I’d like to see more coverage of amateur recording. —John McFadden
JMcF@aol.com

Fantastic?
Editor:
Sterephilès’s recent recording of Rhapsody in Blue sounds fantastic! Unfortunately, Gershwin’s beautiful melodies are obscured by the colorization of Hyperion Knight’s playing. This CD represents the classic conflict between outstanding sonic presentation and music that is not enjoyable to me. I have read other rave reviews of this disc and do not deny those writers their opinions. It’s just not to my taste. —Dan Starr
starrdan@epix.net

Rhapsodic?
Editor:
Over the years, I must have heard Rhapsody in Blue 100 times or more. I had it on 78s and LPs and I had three versions on CD: Paul Whiteman, James Levine, and Marcus Roberts (!). After reading the trifold view of the latest Sterephilès recording by Wes Phillips, Hyperion Knight, and John Atkinson in the June ’97 Sterephilès (pp.70—81), I knew it was a CD I had to have…. One of my favorite paintings is Edward Hopper’s Early Sunday Morning. The light is quite magical. Something of that same quality is in Rhapsody, only it’s not Sunday morning, it’s Saturday. The city (New York, of course) is just waking up after a very busy night. There are still cobwebs in the head, but it’s a working day and there’s much to be done. Slowly, the swinging city comes to life, and it’s ready to take on the world. So is Rhapsody.

Joe Cea’s arrangement captures more of Gershwin’s spirit than Grofé’s or anybody else’s (I don’t know what Gershwin would think of Marcus Roberts), and Knight is an ideal “city” pianist. If I, like Wes Phillips, may steal from Wallace Stevens (not a bad man to pickpocket), you managed to catch Gershwin’s “lucid, inescapable rhythms” just beautifully. From what Wes wrote in June, it was obviously hard work (I didn’t realize New Mexico was so noisy), but the sweat never showed.

Good job! —Jerry Cowboy
Forest Hills, NY

To obtain Rhapsody or any of the other 11 Sterephilès CDs and LPs, call (800) 358-6274 for credit-card orders, or see the ad elsewhere in this issue. —JA

Colloms was confidently wrong
Editor:
The Dynaudio loudspeaker referred to in your report from HI-FI ’97 (September ’97, p.83) is the Confidence 5, not the Consequence 5, as mentioned by Martin Colloms. My system consists of a Krell KPS-201/1 and a Krell KSA-200S driving a pair of Confidence 5s; pure music. —Carlos E. Taboada
CTaboada@sifcom.ar

Clarification from Bob Reina
Editor:
In my three-way tie for best sound at HI-FI ’97 (September ’97, p.97), I mentioned the Classé/Thiel/MIT room as one of the winners. Actually, I neglected to mention that it was the Classé/Thiel/MIT/ASC room. Certainly the Acoustic Science Corporation room treatments were at least as important as the other components in the room, and I should have mentioned them. —Robert J. Reina
reina@citicorp.com

Lisa Astor is fantastic!
Editor:
I thought I was the only woman alive who can barely walk through her back door because a 3’ speaker is blocking the path (“but honey, the imaging is far superior if it’s placed there”); or who, when she leaves for an hour to go grocery shopping, finds that the furniture has been moved around in such a way that, when she comes home, the frozen yogurt melts because she can’t get to the kitchen.

It is a rare occasion when I pick up an issue of Sterephilès and actually read it. (I’m usually picking seven years of back issues off the floor when my boyfriend isn’t looking) But much to my surprise, there actually was an article in August ’97 that I could relate to—Lisa Astor’s “Astor Place.”

It was refreshing to associate with another woman about “the other woman.” My audiophile and I have been together for four years and have lived together for two. When I first met him, I didn’t have a clue of what a line conditioner was. I thought it was a big surge protector (and 400 times more expensive, of course). At the age of 25 I almost had a heart attack when he came home with 10 of speaker cord for which he’d paid $300, and was elated because he thought he got a great deal! “Bite my tongue” if I even mention to him the speaker cords on sale at RadioShack: “But you can get 50 for $4.” Gasp!

My apathy for where and how all the components should be placed was beginning to set in, until I read Lisa’s article…nuuuuuuuu! I think I’ll start small: the coffee table is going back where it should be—in front of the couch, not in the hallway blocking the coat closet. Next, I think we need some plants in this room…maybe I’ll put them on top of the speakers (uhh, I’m not that cruel). Then I’ll get some big throw pillows—he may actually like them—and strategically place them so the sound is better (I can only hope).

Lisa has helped me realize that an audiophile and mere mortal can coexist…with compromise. She offers a wonderful, comical angle on an otherwise “touchy” subject between the two of us. I don’t know how many times I’ve left the living room in frustration because of similar scenarios.

Thank you! Strange as it may sound to me, I know I will be opening future issues of Sterephilès for more of Lisa’s fantastic perspective…and who knows, maybe I could even learn a thing or two. —Gwen Garen
Woodridge, IL
guenster@aol.com

Lisa’s thoughts on the doings of her audiophile appear in every other issue of Sterephilès, alternating with George Reisch’s “Undercurrents.” The next “Astor Place” will be in December. And check out Joan Manes’ sidebar in “Car Tunes” in this issue. —JA

Noise?
Editor:
Music editor Robert Baird contends that most young listeners (i.e., the “third generation”) consider classical music to be “their parents’ music” (“Aural Robert,” July ’97, p.141), whereas Paul Canis (“Letters,” September ’97, p.13), avers that the onus for the demise of the classics lies on the ’60s’ youths’ revolt against their parents’ music (i.e., the “third generation’s” “grandparents”). Perhaps a specific instance may shed some light on the controversy.

My grandchildren have been well-grounded in classical music by their mother. My son, a retired surgeon in the Seattle area, matured with his feet in both worlds. He likes Mahler, but prefers rock music for relaxing or when driving. Sam, my six-year-old grandson, while riding with his father, asked him to turn off the blasting rock. Dr. Champer asked him, “What’s the matter, don’t you like music?”

Sam replied, “That’s not music, that’s noise.” —Oren S. Champer
Queens, NY
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Stereophile (Vol.10, No.9)

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John Atkinson — Silver Signature
Stereophile (Vol.17, No.6)

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Corey Greenberg — Matrix HTM
Home Theater (Vol.1, No.2)
Don't underestimate the younger generation
Editor:
In response to "As We See It" in the September '97 Stereophile, and Paul Canis' letter in the same issue, I am an 18-year-old college student and I enjoy classical music very much, as do my friends.... Yes, I will admit that the majority of classical-music listeners are people over the age of 50, but that doesn't mean that no one under that age listens to classical music.

Recently, the London Symphony Orchestra came through the Orlando area. Not only did many of my acquaintances attend one of the concerts, but many young people who had never been to an orchestra concert went and came home loving the music. I was fortunate enough to attend a session conducted by Mstislav Rostropovich, and yes, the majority of the audience was 50 or older, but I still witnessed many young people in attendance, and they weren't there because their parents had dragged them. All looked to be enjoying themselves, not sitting with the scowl we all would have whenever our parents made us sit through some long, boring event, whatever it was.

Mr. Atkinson, I think you and Mr. Canis and anyone else who feels that classical music is losing appreciation are vastly underrating the younger generation.... Yes, we still have our rock or country or rap or whatever it is we listen to on a regular basis, but this has no effect on our appreciation of classical.

I think that in order to help classical music, you should start addressing a generation that has truly lost its classical appreciation: that of my parents - or, more specifically, yours. Aaron Farb a7202@ganet.uvic.fst.edu

Totalitarian?
Editor:
The current dialog about classical music and the younger generation(s) is something I think needs some additional input from someone in that category. The bottom line for me is this: classical music is one type of music, nothing more. It has enjoyed a long run, and will likely continue to have fans, but it does not deserve any special treatment. Nor is it in any way of more inherent value than jazz, blues, rock, or African tribal drumming. Like it or not, classical-music fans, all of these types of music are art forms, and all have the same inherent value. What possibly can you say that makes Mozart more meaningful than Metheny or Metallica? This is bias, pure and simple. What makes people like music is how it makes them feel.

We live in a society with a free-market economy. People buy what they want. If classical music is struggling to attract people to concerts and classical recordings don't sell well, that means one thing and one thing only - most people want to listen to something else! And that's their right. The idea that just because classical music has been around longer it is somehow of more value than contemporary rock, jazz, blues, folk, or whatever, is not only ridiculous, it's prejudicial.

And don't go claiming that music education is the "solution." There is no "solution" because there is no problem. Music education should teach people how to read and play music. If you want to teach kids music history, then go ahead, but you'd better plan on complete histories of jazz, blues, rock, and classical music.

Everyone has the right to choose what they want to listen to, and this is an immensely personal thing. Walk into a Best Buy - the variety of music available for purchase is enormous. If enough people continue to want to buy classical records, you can bet there will be plenty for sale. But to think that people should buy or listen to classical music... how totalitarian.

I like classical music, by the way. I've got 100 or so classical recordings - and I just ordered four more from Stereophile! I've been to see the Chicago Symphony Orchestra numerous times. It's not like no one knows it exists - it seems to me like it's everywhere. But I prefer jazz over classical, and types of rock over both. That's just who I am.

So, for the Stereophile readers and staffers who think more people should listen to classical music, get a life. Your real agenda is to make sure classical music stays around for you to enjoy. If you wanna do that, there's a simple formula: BUY MORE RECORDS AND GO TO MORE CONCERTS. I see classical-music-loving audiophiles' 100-CD collections and laugh. Hell, I've got as much classical as that, and it's 5% of my total collection. Buy more, and people will make more.

And for you, Stereophile, make sure you reflect the RIAA statistics carefully. Wanna be around in the 21st century? Realize that young, zealous audiophiles like me mostly listen to rock and jazz. You do a good job of reviewing this music, but only some of your equipment reviewers use it as reference material. There's plenty of it that's good enough - use it. I'm not suggesting your reviewers need to listen to it for pleasure, of course - that's entirely up to them.

Rob Hughes Evanston, IL rhughes@polycom.com

What's wrong with this picture?
Editor:
As someone who likes classical music but does not love it, I am amused by editorial after editorial blaming the decline of classical music on the abandonment of music education in schools. The whole exercise reminds me of a product team one of my staff spoke to: He had called them about an annoying user-interface feature that the product had, to which the product team replied, "Yeah, during the focus group meetings, we had to educate the group members as to the benefits of our interface." When I heard that, I knew the product was doomed: You do not educate your customers about the superiority of your product. They educate you about what's wrong with your product! Similarly, even though I grew up with a school system that had not abandoned music education, I do not find modern classical performances particularly compelling.

A few years ago, that esteemed newspaper The Economist published an article on the decline of classical music. To their mind (and I found myself in agreement with them), the decline of classical music is easy to explain: the form has become ossified, fossilized, and rigid, impervious to change or innovation. They claimed that Mozart certainly did not intend for his pieces to be played note for note, and that he was well-known for his virtuoso performances with flourishes and embellishments that would be decried as blasphemy today. The result of this ossification is that interpretation is limited to subleties not easily grasped by the lay audience.

Consider the modern symphony performance. The first barrier is the stiflingly formal atmosphere. You're almost expected to dress up and wear a suit. I myself unwillingly wear a suit for important events like weddings. I would not pay money to go to a performance where I had to dress up. That's like paying to sit in congested traffic! Second, it is not at all clear what special qualities a particular symphony brings to the table - fewer mistakes in a performance, maybe? Yes, yes, I know there are differences, and that they are significant and important. But if I have to go to several concerts to figure it out, or listen to a recording several times before I'm supposed to "get it," then
The horse, the automobile. The typewriter, the computer. The cassette tape, the Digital Recordable MiniDisc. Record music on your home deck and play it back anywhere. Just like tape. Digital sound and instant access to any song. Just like a CD. Record or mix up to 74 minutes from your CDs. All on one 2.5-inch MiniDisc. Then take it anywhere you go, and play it back on your car deck or portable player. Now that's progress.
perhaps I might decide that the entire exercise would not be worth my time.

Contrast this to a rock performance. Or perhaps something more genteel, like the recent “Liilith Fair” concerts across the country. First of all, the atmosphere is entirely casual. This was the kind of event where you could bring your friends, a picnic basket, and make a picnic out of it. The place, by all accounts, had almost a carnival-like atmosphere, with multiple stage performances going on at once on occasion. The performers bantered, and in some cases held conversations with members of the audience during the performance. Is it a surprise to anyone that pop music concerts make money, while the symphonies have to be subsidized?

And when it comes down to interpretation — there’s nothing subtle about it in the pop music world. Compare Tori Amos’ performance of “Smells Like Teen Spirit” with Nirvana’s original. Or even Sarah McLachlan’s multiple versions of her song “Good Enough.” The other day I heard (on the radio) someone setting the melody to The Police’s “Every Breath You Take” to something resembling rap (or it could have been rap). It might not have been something I liked, but they were doing something original — something that a classical musician would never have the courage to do, even if he or she had the imagination to do it. You didn’t need multiple listeners to interpret it, nor did you need a formal music education to understand it. Perhaps classical-music fans might call such obviousness “shallow.” I would choose to call it “accessible.” And under the right circumstances, such simplicity would become “compelling.”

There’s nothing about being old that dooms a particular product or performance. In photography, for instance, Ansel Adams’ pictures are every bit as compelling today as they were in his time. My parents’ generation likes his pictures every bit as much as I do. Similarly, the fact that classical music is still far and away the most popular backdrop for commercials and corporate answering systems says that there’s nothing wrong with the music per se. Performers who bemoan the lack of support for their performances should look no further than themselves.

Piaw Na
piaw@mpath.com

Art indeed!
Editor:
It may not be pleasant, but someone has to say this to Paul Canis and other classical-music fans: classical music isn’t selling particularly well in any age group. If the recording industry keeps addressing sagging sales as a result of a “generation gap,” then they will kill it off altogether. In Mr. Canis’ words, it is a “very stale and musty old idea.”

I’ve always been of the notion that art imitates life — that in mind, it’s not hard to see why classical music has been eclipsed by most of the music of the 20th century. Sure, it’s great music, but it’s not our music. I think it’s a question of accessibility. Most 20th-century music (country, jazz, blues, rock, bluegrass, etc.) is essentially folk music. It’s written and performed by regular folks, for regular folks. It’s about regular folks and celebrates regular folks. It’s written in our language, about events in our lives and/or things that concern us daily. It’s an expression of our own culture, and most important, it’s something we’re all allowed to be a part of. The rock community, especially, has a history of encouraging active participation and involvement. Can that be said of classical music, even in its own time?

I wish I could help, but I’m just one guy with a stereo. Believe me, I’m tried to get into classical music: I went to Lincoln Center and was chased away like a leper. On the way home, I stopped at the record store. The staff giggled and sneered when I asked what made any of the 109 available performances of the “Eroica” any better than the others. I ran away in shame. When I went home I turned on the radio — no classical-music station in New York? Ain’t that a bitch. Nah, man, this is too much work for me. You may want my money, but you sure as hell haven’t shown that you want me. Art indeed!

MacGregor S. Ryder
Brooklyn, NY

Sales techniques
Editor:
Much has been written lately about the decline in popularity of classical music, especially among young people. I am sure that part of this trend is due to the lack of customer orientation of the live-event product. After all, it is live music that usually first sparks the passion of music lovers. I can easily imagine the following exchange between a young potential classical-music lover (YPCLM) and a metropolitan classical-music box-office bureaucrat (MBOB):

YPCLM: “Hello, I’d like to buy a ticket to the Beethoven show scheduled for next month.”

MBOB: “That series is sold out, but here’s a brochure for next season.”

year, that is"

YPCLM: [Looks through brochure, then…] “Okay, I’ll buy a ticket for the Mozart show scheduled for 12 months from today.”

MBOB: “First we take subscriptions for the whole series; then, if there are any seats left, we sell them.”

YPCLM: “You mean if I want to be sure to see the show, I need to buy tickets for all eight shows? How much is that?”

MBOB: “The best seats, down in the premier section, are $300 each for the series.”

YPCLM: “Well, I guess I’ll take one set. I really want good seats.”

MBOB: “They usually all sell out to our long-time subscribers and corporate sponsors, but I can probably get you into the second balcony, near the wall. If you make a big donation, you’ll move up on the waiting list.”

YPCLM: “Uh-huh.”

MBOB: “You just pay now and we’ll notify you of your seat assignment in about six months. Oh, and remember, if you show up late, they won’t let you in until the next movement.”

You get the picture. Suddenly the young potential lover of classical music remembers that there’s a rock’n’roll band playing at a club right down the street that very night. She/he shows up at the door just as the band starts playing, pays $15, gets hand-stamped, ordered a drink, and wonders, “Should I dance or just sit back and enjoy the show?”

Walt Cuje
Little Silver, NJ
Walter_Cuje@pmailgwml.com

Synchronicity?
Editor:
Someone, maybe Jung, speaks of synchronicity, or the sense that there is more at work than mere coincidence. Whatever that means, my wife and I have just returned from five days in Taos and Santa Fe. While there we attended three nights at the Santa Fe Chamber Music Festival — an event we have enjoyed for several years now — and as I sat there looking around I mentioned to Cheryl that the mean age of those attending seemed to be about 60! At 43, we were the babies in the audience. This was the first time I can recall really feeling out of place at a classical concert. Where were others from our age group? Well, there were a few…but more scary still, I saw no one from the famed X generation.

Back home again, I open our mailbox to find the September Stereophile. Opening to “As We See It,” I read John
Enjoying the music
Editor:
I read with amusement John Atkinson's comments on classical music in September's "As We See It." Like JA, I went to my first "classical" concert about 30 years ago. The performance was one by the Kansas City Symphony, and the music was Beethoven's Sixth. I have never forgotten the "storm" passages, even though I, like much of that audience, was only of grammar-school age. That performance started a lifelong love of all music. The audience then was mixed: different ages, different sexes, different backgrounds. There were families like mine, dirt farmers as well as "rich folks," and everybody seemed to be enjoying the music.

I've taught music all my life, to people of different ages and backgrounds, and I find that the old standbys like Handel, Haydn, and Beethoven are always popular. Granted, our community is so rural that few of us have the time or money to travel to cities like St. Louis or Chicago or New York or London, but that doesn't stop us from enjoying music. And three years ago when the Kansas City Symphony traveled to our county seat to give a concert, the venue was packed—standing room only, all ages and backgrounds. In a county with a population of about 20,000, attendance was near 11,000—just to hear classical music. When the Symphony organized a series of chamber performances two winters ago, within two business days tickets sold out for all the performances, which ranged from solo piano to harp and violin concertos.

Only old folks like classical music? I think not. Classical music appeals to a vast and varied audience. It may be that some people "don't understand" classical music, but one needn't understand it to enjoy the 1812 Overture, or the Ninth Symphony, or Peer Gynt. Could it be that audiophiles simply don't appreciate recordings of classical music, in part because CD and "quality" are virtually mutually exclusive? Could it be that even audiophiles are weary of the same tired performances?

Or could it be that audiophiles simply don't appreciate music at all? One audiophile friend of mine, for example, when taken to a live classical performance, complained that "there must be something wrong" with the performance because his hi-fi sounded so much better. That sums up my experience with audiophiles in general—they've no conception of music, be it reggae, jazz, or even those masterworks of human endeavor, classical symphonies.

Look around. Real people do love classical music. 

If it's a Yugo, don't expect Toyota sales
Editor:
Halfway down "As We See It" in the September '97 issue (p.3), John Atkinson puts forth the question: "But why are classical CD sales so low?" He then closes the same "As We See It" with another related and wistful inquiry: "Anyone know how we can get classical music back into the streets?"

Okay, let's for a moment not blame "younger people" when only 500-2000
LETTERS

The magic of Denon Surround Sound componentry is its unique ability to transform your viewing experience into one so compelling that you actually believe what you are watching is real.

From the no-compromise Dolby Digital/THX 5.1 AVR-5600 to the remarkably affordable AVR-600

Dolby Pro Logic Surround Sound Receiver, Denon delivers new dimensions to home theater.

Experience Denon Surround Sound and you will instantly discover that what you see is what you hear.
GRANDE UTOPIA

“For me, this is truly the ultimate desert-island loudspeaker”

Jack English,
Stereophile, Vol.19 No.5
Furthermore, the young people of today may then begin to appreciate recorded classical music for the first time—something that is too much to ask now, when classical-music lovers themselves find it impossible to stomach such a musically offensive format. Almost nobody is buying it in its present form, this we know. Don't the people at Philips, Sony, DG, and the other music labels understand that a truly worthwhile recorded music format will bring big bundles of classical-music dollars to the till? The key is: If it's a Yugo, don't expect Toyota sales!

Siegfried A. Mades
Oakland, CA

More respect, please
Editor:
Thank you, Sam Tellig ("Sam's Space," Stereophile, August '97) for confirming what has been common knowledge for years among many of us McIntosh owners. With their balance of brute force and tubelike finesse, McIntosh amplifiers can stand up to the best of their genre. Perhaps now our fellow 'philes will show us a little more respect.

C. Nathan Graves
Dryden, NY
go@argraves@clarityconnect.com

A civic duty?
Editor:
It's a gentle New York evening—a breeze, low humidity, a jackhammer off in the distance, and the steady cadence of traffic across the Brooklyn Bridge. An almost perfect NY August evening, but there's this Stereophile lying on the floor, and it won't let me rest.

Wes Phillips, a man of varied words: funny, serious, prophetic to commentative—always a good read, and, I suspect, a good guy. But what's this Lamm Audio Lab L1 line-level preamplifier review (August '97, p.97)? Okay, okay, I know what you're thinking, and no, I don't own a Lamm L1, I own a Convergent Audio Technology SL Mk.II. So why am I writing this letter? Let's just say it's my civic duty.

I've spent many an hour listening to the L1, enjoying its open, transparent nature, neutral to the point of self-effacement. My experience is not limited to my system, but includes others with very different equipment in very different acoustics. Never have I heard what Mr. Phillips described in his review.

At first I thought maybe he was reviewing a different L1, one of whose existence I knew nothing. A short call across the bridge to Brighton Beach confirmed my bewilderment: It's the same Lamm Audio Lab.

Now I must confess, I'm confused. How can I hear something 180° from what Wes heard? Let's see, Santa Fe... clean air, power, New Age gibberish, interface between the Levinson DAC and the Lamm line-stage, or the shifting grains of the New Mexican desert sands. Maybe it's as simple as this: we all hear what we want to hear... or is it what we're told to hear?

Jeffrey Michael Catalano
New York, NY

Not telling the truth?
Editor:
It was with some surprise that I noted the dichotomy between the aural observations and the technical measurements in Wes Phillips' review of the Lamm L1 line-stage (August '97, p.97). Like so many audiophiles, I'm no stranger to the idea that measurements do not tell the whole truth at all times—nor do our ears. Wes, however, is a seasoned reviewer, so I wonder what might be the real reason for the difference between what he heard and what Tom Norton measured.

I have lived with the Lamm L1 as my principal reference line-stage for just about three years. It has survived for so long in my system because of its ability to handle anything I put in front of it, as well as in back, of it, with absolute neutrality and great transparency. This includes all kinds of DACs, long and short interconnects, as well as a wide array of tube and solid-state amplifiers. During these three years I've heard all kinds of anomalies and strange colorations all right, but after investigation I've always been able to put the blame squarely on other culprits—not on the L1!

On a couple of occasions I've also measured the Lamm L1's performance to make sure it didn't drift, and that the tube-regulated power supply was still up to snuff. These measurements agreed with Tom Norton's findings and with Lamm Audio's specifications.

So what gives here? On the one hand we have a bunch of objective measurements by different individuals showing very extended frequency response with exceptional neutrality; on the other hand we have subjective aural observations from a reviewer and his friends of midbass coloration and loss of low bass. Objective vs subjective? No, I know better than to go there!

What about the interconnect that was removed when Wes bypassed the Lamm L1 and went straight from the Levinson No.39 to the VTL 750? Could this have caused both the midbass hump and the loss of "nearly an octave" of the lowest frequencies? My experience with interconnects would indicate that this could happen with a poorly matched cable or one that was not properly "burned-in."

I don't think that Wes and his friends heard wrong—there was obviously a problem with the bass response in his system. However, he may have fallen into the old audiophile trap of attaching blame by exclusion rather than by properly investigating the root causes.

The Lamm L1 is a terrific line-stage and deserves better.

Late Fredell
Redding CT

Stunning fidelity?
Editor:
I've never written to Stereophile before. Hell, I've never even admitted to anybody that I had your publication before. But all that was before Wes Phillips' August review of the Lamm L1—a review that was so off-base, so inaccurate, and so irresponsible, I just had to write.

That said, I will tell you I'm no audiophile. I'm a record producer and a recording engineer. (If you want to hear my work, pick up the latest CDs from Bob Dylan, Billy Joel, James Taylor, and the Fugees.) In my duties as both a producer and an engineer, I use a Lamm amplifier. Why? Because it is absolutely neutral and truer to the source than any amplifier extant.

I can't tell you how many anps we've had in and out of our mastering room that couldn't do justice to the tracks I laid down. The Lamm can and does. The L1 exhibits the same kind of total, irresistible, and utter neutrality.

While, of course, we have no use for a line-stage in the studio, I've had the opportunity to listen to the L1 in three different home installations. Two of these systems were evaluated using my master tapes and a fixed-resistor bypass. Not once did the L1 exhibit the characteristics attributed to it by Mr. Phillips. On the contrary, it displayed the same kind of stunning fidelity to the source and dynamic virtuosity that Mr. Shushurin's amplifiers do.

If something anywhere in the recording chain adds or detracts from the source, it is instantly obvious to me. So I can tell you this in absolute terms: The coloration that Mr. Phillips reports simply does not exist in the L1.

A responsible journalist would have installed the unit in a variety of different systems to get the true measure of the
"The YBA is a remarkable achievement owing to its combination of purity, openness and superb dynamics. In each of these areas, this integrated amp rivals the very best separates available."

The Audio Adventure

"The best integrated amp I've heard so far."
Hi-Fi News—Ken Kessler

"The YBA DT Integre is remarkably transparent, offers great neutrality, and yet can still seek out the soul of music. A class act."
Hi-Fi News—Ken Kessler

"YBA gear is like a Mercedes automobile, even the less expensive models are built to a very high standard. Yes, you can buy someone else's separate preamp and power amp for the price of the YBA Integre. But you wouldn't own a YBA."

Sam Tallin. Stereophile
L E T T E R S

piece. If Mr. Phillips did so, he certainly didn't report that fact in his review.

In point of fact, the true measure of the L1 is far better reflected in Mr. Norton's test results—the unit was virtually flawless. That's the way it measures, that's the way it sounds. To report otherwise is egregiously and obviously wrong.

You have done a great disservice to one of the world's great audio designers—Mr. Vladimir Shushurin. Sounds to me like you owe the man an apology.

Joe Nicolò
Conshohocken, PA

Biased?
Editor:
I write in regard to Wes Phillips' conclusion in August that the Lamm L1 line-stage "emphasizes the lower midbass region to the detriment of ultimate low-frequency extension and transparency." This does not reflect my own experience with the Lamm. I recently exchanged a different Class A preamplifier for the Lamm L1. In contrast to Mr. Phillips, I found the L1 to cleanly and accurately present the low end without a hint of bloat. ... While reviews can be helpful guides, I have learned the hard way to trust my own ears rather than the conclusions of someone I have never met, and whose listening room I have never heard. If not for what I consider to be a much more serious concern, I would skip writing this letter and only make a mental note to take anything written by Mr. Phillips with an extra-large portion of salt.

A more substantive concern I have is not the conclusions reached by Mr. Phillips, but the process he used to reach them. It is my understanding that, until recently, Peter McGrath was an audio dealer representing at least one of the manufacturers mentioned in the review as direct competition to the Lamm L1. If this is indeed the case, Mr. Phillips' conclusions regarding the Lamm L1 were clearly influenced by an obviously biased party.

The lack of disclosure with respect to Mr. McGrath's position is also disturbing. Mr. McGrath's proactive role in the evaluation process is bad enough, but if his position had been disclosed, at least a reader would have had the opportunity to recognize the slant he might have brought, and its potential effect on the review.

One hopes that this active participation of a biased party in Stereophile's evaluation process represents an aberration rather than the norm.

Jeremiah D. Mahoney
 Suffield, CT

Losing sight?
Editor:
Levinson, Krell, and others were once where Lamm is currently positioned in the marketplace. The audio press once had the objectivity to report and get excited over equipment that was little known and perhaps produced little revenue for their publications. New manufacturers broke new ground and made the hobby exciting. Allowing the best to surface without the interference of other advertisers or the fear of lost revenues made Stereophile what it is today.

Perhaps, dear Editor, you are losing sight of this.

Donald D. Reefe
Framington, CT

Reviewing errors?
Editor:
As the owner of a Lamm L1 preamp, I looked forward to reading your review. My most tactful evaluation would be to smile and suggest that the reviewer's final conclusions are inaccurate.

James Bianco, MD, FACOG
Nashua, NH

We had our say in the review; Dr. Bianco, Mr. Reefe, Mr. Nicolò, Mr. Mahoney, Mr. Fredell, and Mr. Catalano have now had theirs (along with a number of other readers whose letters we don't have room to publish). Having auditioned the Lamm L1 preamplifier in Wes Phillips' system, I am confident that he correctly described its sonic character, particularly as the Levinson No.39's volume control allowed us to perform a revealing bypass test. The visit of Peter McGrath of EggelstonWorks mentioned in the review was to allow us to audition his 4-channel surround-sound tapes and for him to get an idea of how the EggelstonWorks Andra speakers were performing in WP's room. Wes's opinion of the Lamm L1 was already formed by the time of this visit, and, in common with almost all manufacturer representatives who visit the magazine, Mr. McGrath was careful to observe the proprieties, not offering opinions unless directly asked to do so.

--JA

Technical errors?
Editor:
I am writing to point out a technical error in all of Stereophile's power-amplifier reviews. The error is in your calculation of power in dBW (decibels referenced to 1W) with decreasing load impedance. As an example, let's use Steven Stone's review of the Marantz Model 9 in August (Vol.20 No.8, p.85). According to the specifications, the amplifier's rated output in ultralinear mode is 70W into 16, 8, and 4 ohms. You state these in dBW: 18.5dBW, 15.5dBW, and 12.5dBW, which represent a 3dB drop in output (a 50% loss of power) with each halving of load impedance. Actually, as the Model 9 is rated at 70W into each of these load impedances, then the power stated in dBW must remain the same. The term dBW is just another way of stating power level.

Richard Ganam
Los Angeles, CA

No technical error, Mr. Ganam. As we have explained before, we follow the standard that if first heard defined by Martin Colloms: The reference for dBW ratings is the voltage that gives rise to 1W power into 8 ohms. This is equivalent to 2W into 4 ohms and 4W into 2 ohms. A perfect amplifier would therefore have the same dBW rating into any load—an easy paradigm to grasp. The drop of 3dB in the Marantz Model Nine's dBW rating each time the load impedance halves gives a graphic idea of how the amplifier departs from being a true voltage source.

--JA

The view from 12V Land
Editor:
I have read Stereophile with great interest for almost six years now. I commend you and your staff on producing the best magazine of its kind, period.

My background as an audiophile started in 1989 as a car-audio installer. One day I purchased Stereophile on the advice of a friend I met at a home audio show. At first, I hated it. Man, these guys must be smoking some stiff stuff, I thought. I mean, what does "cardboardy" mean anyhow? A thousand bucks for some RCA cords? Don't they know they come free with lots of gear? But your magazine kept drawing me back. At first it was just to read the advertisements. Then I began to read the entire magazine, cover to cover.

I can't believe the number of people who complain about every little thing they don't like about Stereophile. It offers something for a broad audience in a way no other publication does. Stereophile has taught me an immeasurable amount about how to enjoy music, and how to select components based on musical taste. I have come a long way in these six years as a reader—from my car system with two 18" subwoofers, lots of processing, and thousands of watts, to my listening system consisting of a minimum number of components (Spectral, B&W, McIntosh, Pioneer) without any processing whatsoever. Had I never picked up a copy of Stereophile, I might still be way off track. I used to tweak my car system by using other car systems as a reference. Now I tweak it by using my
listening system as a reference.

I love the two columns that get the most negative feedback: Wes Phillips' "Car Tunes" and Michael Fremer's "Analog Corner." It is important for Stereophile and its readers to recognize the fact that car audio has come a long way since the Boom boom. Many car systems sound quite realistic. There are many people like me who make their livings in car audio but who can't wait to get home and spin some vinyl to forget about the long day. If the High End is to experience growth, Stereophile needs to be able to recruit these people by welcoming them with open arms. After all, the guy in the bass-booming low rider and the card-carrying audiofile both share the love of music, just in different capacities. (Yeah, I know, some of the kids don't have a lot of respect when it comes to playing their systems at reasonable levels in residential areas.) "Car Tunes" is a great way to reach the millions of kids with boom-boom systems. These kids do grow up to realize there is more to enjoying music than heart-pounding bass.

To Michael Fremer: Curse you for having me out all Sunday in search of vintage vinyl at flea markets. I still don't really understand why these old records can seem so easy to listen to in comparison to CD's. I'll keep reading your column, and maybe I'll find out.

Tony Candela
toni@flash.net

News from the Twilight Zone
Editor:
In the spirit of sharing inexpensive tweaks that drastically improve sound quality, we thought you might be interested in the wonderful tweak we discovered for the Cambridge SoundWorks amplified speaker system. We expect it is also applicable to other subwoofer/satellite systems.

As computer-science graduate students, we spend considerable amounts of time at work in front of computer displays. Many students in our department, including ourselves, use satellite/subwoofer systems such as the Cambridge for high-quality music listening in this setting. Typically, a satellite is placed on either side of the display to achieve a good nearfield stereo effect.

Being tweakers, we have done the obvious things to improve the sound, such as enhancing the active crossovers with polypropylene capacitors, improving the fill and stiffness of the subwoofer enclosure, and Monster-Cabling everything.

In an effort to improve imaging, one of us (Paul) decided to try to raise his satellites several inches from their normal desktop positions so that they could fire horizontally. Since no stands exist for this purpose, he had to improvise. Unopned soup cans did the trick nicely. Imaging improved drastically — the whole soundstage snapped into focus remarkably well. Sure, it still wasn't the same as listening to my carefully positioned Acoustats at home, but it was a vast improvement.

Imaging and overall frequency response immediately improved with the new soup cans. On the Reiner recording of Scherherazade, the image of the orchestra just snapped into place, each group clearly "visible" on the soundstage. In addition, the mid bass response of the system improved considerably. Cellos in the orchestra that were muddy before were now clearly audible. On the Columbia gold CD of Kind of Blue, the instrumental lines separated better than ever, with Coltrane's tone cutting through the rhythm section.

Since it worked so well for Paul's setup, I decided to try the soup-can tweak myself. In my setup, using the identical Cambridge SoundWorks system with the same prior tweaks applied, the effect was far less pronounced. Intrigued, I investigated more thoroughly and found that the only difference was the type of soup in the cans. I borrowed Paul's soup cans and, sure enough, heard the same wonderful improvement that I'd heard on Paul's system.

Being scientists in training, Paul and I decided to do a small measurement study of the effect of the contents of soup cans. We conducted an informal A/B comparison study using eight kinds of food products packaged in standardized soup cans. The sample size was 17 randomly selected individuals from the 30 who responded to a request posted on our in-house Zephyr messaging system.

In each trial, the individual compared unopened cans filled with the current food-product selection to the default can, which was filled with distilled water (density 1gm/ml), and rated the food product on an integer scale of 1 to 5, where 3 signified equivalence to the default can, while 1 and 2 meant the test can was inferior and 4 and 5 indicated that the test can was superior. Neither the test subject nor the tester knew which can contained the food product or what that product was. Each individual judged each of the food products in this manner.

In each trial, the music played was the first 1.5 minutes of Boney M's "Rah Rah Rasputin," at an average measured level of 70dB (A-weighted) at the listener position of precisely 0.5 meters from the front of a Digital 2" display and equidistant from the satellite speakers, which were aimed directly at the listener position. The following table summarizes our results:

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<th>Food Product</th>
<th>Density Mean Variance</th>
<th>Min</th>
<th>Max</th>
<th>gm/ml</th>
<th>Rating</th>
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<td>0.62</td>
<td>1.3</td>
<td>0.5</td>
<td>1</td>
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<td>Progresso beans</td>
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<td>3.0</td>
<td>0.6</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Squid in veg. broth</td>
<td>0.95</td>
<td>2.0</td>
<td>0.4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Evaporated haggis</td>
<td>0.96</td>
<td>3.1</td>
<td>1.5</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Distilled water</td>
<td>1.00</td>
<td>3.0</td>
<td>0.1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Spam™</td>
<td>1.05</td>
<td>3.5</td>
<td>0.5</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Chicken broth</td>
<td>1.09</td>
<td>4.0</td>
<td>1.0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Chocolate syrup</td>
<td>1.15</td>
<td>4.3</td>
<td>0.5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Evaporated milk</td>
<td>1.20</td>
<td>3.7</td>
<td>1.0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Chili with beans</td>
<td>1.21</td>
<td>3.0</td>
<td>1.0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Condensed milk</td>
<td>1.23</td>
<td>2.0</td>
<td>0.7</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Notice that there seem to be two sweet spots: one at 0.80gm/ml, the other at 1.15gm/ml. This clearly warrants further research. Variance seems to be all over the map, which is perhaps not surprising given the qualitative nature of audio.

We encourage your readers to experiment with food cans of different densities in order to find what sounds ideal to them. Paul and I have upgraded to cans of chocolate syrup.

Please note that the opinions expressed in this letter are our own and do not in any way express the opinions of CMU or SCS.

Peter A. Diida, Paul Placeway
School of Computer Science
Carnegie Mellon University, Pittsburgh, PA
pdinda@cs.cmu.edu

Stereophile, November 1997
What is floating and grounded at the same time?

The Isolated Shield Matrix™ from TARA Labs, a revolutionary new system for the isolation and grounding of RF and EMI.

Isolated Floating Shields™ isolate RFI and EMI outside the signal path of the cable. Ground Stations™ absorb and ground the RF/EMI energy, preventing distortion of the musical signal.

The result is an awesome drop in the noise floor. Soundstage images and musical information are revealed with breathtaking clarity and realism.

For the select few who have heard this difference, there is no going back. ISM™ is a watershed new technology that will be in use in every high-end audio system in the next millennium.

You can experience it now. Call your TARA Labs dealer for a demonstration of the Isolated Shield Matrix.

TARA LABS
541/488-6465
www.taralabs.com
What are RFI and EMI?

Radio Frequency Interference (RFI) is caused by radio waves. Electromagnetic Interference (EMI) is caused by appliances which generate electromagnetic fields via transformers and other electronic components. Both RFI and EMI distort and color the audio signal. Both are pervasive. Even in remote rural areas, your system can be affected by sources of RFI and EMI in your home.

Don't shielded interconnects eliminate this problem?

No. Conventional shields are quite ineffective at preventing RF/EMI intermodulation of the audio signal. Because they are connected to the cable, and therefore to the components, the energy they absorb modulates the audio signal.

The Isolated Floating Shield™ is not attached at either end of the cable. The energy it absorbs is transferred to a remote component called a Ground Station™, where it is grounded outside the signal path.

If I don't hear a hum or any noise in my system I don't have a problem with RFI/EMI, right?

Wrong. You have been listening to RF intermodulation in your audio signal from the beginning. We all have, because until now there has been no technology to eliminate it. Therefore we accept a certain level of RF obscurcation as "normal."

Is there a difference between Ground Stations and the boxes on those other cables?

Yes. The other boxes rely on a filtered signal path. The musical signal is passed through a filter network. These filters limit the bandwidth and remove the higher order harmonics of the music along with RF energy. Filtering results in slower rise time and rippling, which are heard as a dulling of transient information and a variety of amplitude versus frequency shifts.

Conversely, the Isolated Shield Matrix™ removes RFI and EMI outside the signal path. This technology maintains the integrity of the natural signal path within the cable and leaves the higher order harmonics of the music intact. The audio signal within the cable is unimpeded and unaltered between the components.

What can I expect to hear with ISM?

A silent, black background. Musical notes fade with an effortless and natural decay. Micro-dynamics that were lost in the noise floor become audible for the first time. It's a difference you must experience to fully appreciate.

Which cables can be used with a Ground Station?

At present there are a range of cables from TARA Labs which are ISM™-ready, starting at $995/meter pair. In addition, there is a variety of other ISM components which work with cables and Ground Stations to eliminate the negative effects of RF/EMI.
Everything you hear is true. Audio: SuperZero • SuperOne • 1.5 • 2.5 • 3.3 Home Theater: VI-2 • VS-7 • VI-1.2 • VS-1.2

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UNITED STATES
John Atkinson
We were saddened to hear of the passing of Ross Keim in an automobile accident on August 12. Ross was vice president, sales, for Meridian America and had joined the company in 1992 after a career in specialty audio retailing. Ross was an excellent sales director. He did a lot for Meridian, and the company has grown significantly with his help. He will be missed both personally and as a colleague,” said Colin Aldridge, Meridian America's president.

INTERNATIONAL
Barry Willis
The big news in August was an announcement by the minivitrate of Sony Corporation, Philips Electronics NV, and Hewlett-Packard Corporation that they would not support proposed standards for a recordable, reusable form of the Digital Versatile Disc known as DVD-RAM. The pullout by Sony and Philips drives a wedge in the tenuous coherence of the so-called DVD Forum, an organization of 10 major electronics manufacturers. HP is not a member of the Forum, but as the world's second-largest maker of computer equipment, it has a serious interest in the new format's technical specifications.

Conflicting opinions about the motive behind the move by the three electronics giants appeared in the media almost immediately. They included acknowledgments of the technical superiority of the Sony/Philips format—3 Gigabytes of digital storage capacity is the 2.6GB of the Forum-supported format—and speculations about long-term marketing strategies for a device that is variously predicted to replace the floppy disk, the CD-ROM, the hard-disk drive, the audio CD, and the video tape. Widely mentioned was the fact that although Sony/Philips did most of the initial research and development on the general DVD, few of their proposed technical specifications survived in the final product. The DVD movie format, with a few titles already on the market, more closely resembles the original proposal put forth by Toshiba and Matsushita, who enjoyed the support of major film studios.

Yet another wrench was thrown into the DVD works by NEC, who, the day after the Sony/Philips/HP announcement, issued a statement that it would pursue its own format for a recordable DVD. NEC's version, which it is calling a "multimedia video file," is claimed to have a single-sided 5.2GB capacity—more than enough for a two-hour movie. That could be a significant factor for gearheads as they see the "system of the future," in which high-capacity memory storage devices will be stacked for downloading data streams of all varieties: music, movies, games, and information.

(See the report on the 1997 "FireWire" Development Conference elsewhere in this issue's "Update.")

DVD is barely out of the box, and the format wars have already begun.

Dealers promoting manufacturer and designer seminars should fax (do not call) Debbie Starr the when, where, and who at (505) 983-6327, at least eight weeks before the month of the event—ie, if you're putting on something in January 1998, you should get the information to Debbie no later than November 1. Mark the fax cover sheet "For the attention of Debbie Starr—Dealer Bulletin Board." Promoters of hi-fi shows and audio societies promoting manufacturer visits should also fax Debbie the details as soon as possible.

ARIZONA
- Tuesday, October 28, 7-9pm: Showcase-Home Entertainment (15672 N. Pima Road, Scottsdale) will host a meeting of the Arizona Audiophile Society featuring a seminar on high-end audio and home theater with Robert Harley of Hi. He will also be signing copies of his books, Home Theater For Everyone and The Complete Guide to High-End Audio. Call (602) 905-5555 for information and reservations.
- Saturday to Sunday, November 8 to 9: The first annual Southwest Vacuum Tube Enthusiast's Weekend will be held in Tempe. Events include an Arizona Antique Radio Club swap meet at Antique Electronic Supply (6221 South Maple Avenue) at 7am, followed by an Arizona Audiophile Swap Meet at 11am at Arizona Tube Audio (688 West First Street). On Sunday, Vacuum Tube Valley Magazine will present the Tube School for
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Telephone: (514) 636-6384  •  Fax: (514) 636-1428
puter industry will run a distant second—demand for DVD-RAM and -ROM will possibly reach into the tens of millions in the same period.

What kind of numbers might we expect from DVD-audio for the High End? Early sales are likely to be disappointing given two facts: 1) Audio hobbyists are notoriously slow to accept new technologies. 2) This industry is populated by many small companies who consider an annual sales volume of a couple hundred units to be enormously successful. It’s no accident that an audio-only standard was near the bottom of the list on the DVD Forum’s agenda.

UNITED KINGDOM
Paul Messenger

Less than a year after the Verity Group first unveiled their NXT flat-panel loudspeaker technology, the development effort has grown so substantially that its momentum is starting to take over the company. Some 25 of the UK’s top loudspeaker people are now working on the project, which probably makes V-Labs the largest loudspeaker research operation in Europe, while productive partnerships are being forged with major multinationals like NEC (for PC audio) and Samsung, with more announcements imminent.

In order to generate the cash needed to continue financing this major new technology, Verity has announced the sale of Britain’s two most famous hi-fi brands, Quad and Wharfedale. The formal news is that Stan Curtis is to head a management buyout under a new International Audio Group (IAG) banner, paying £4.8m ($7.7m) in cash and loan notes for 60% of both companies. The rumor mill points towards Far Eastern finance (à la KEF, Celestion and Rogers), Taiwanese distributor Sancore already handling the Airdale brand ProAudio speakers made by SG Acoustics, a young company that is already part of IAG.

An erstwhile magazine reviewer and itinerant designer for numerous brands, Stan has proved his engineering prowess in electronics and acoustics over more than 20 years as an industry stalwart. After five years heading up the Wharfe-dale operation, he has now shown similar expertise in financial engineering, with a complex deal (subject to Verity shareholder approval) in which Verity retains a 40% interest, but which should give Quad and Wharfedale the opportunity to flourish again without the handicap of their share of Verity’s resources being diverted to NXT development.

Verity meanwhile believes its future lies primarily in the development and exploitation of NXT and related technologies, and in concentrating on its core Mission brand.

UNITED STATES
Barry Willis

Let’s pretend there’s a best-selling book on the market that retails for $20. You can buy this book at any bookstore and enjoy it as long as and often as you wish. Or you can borrow it from a friend when she’s done with it. Or you can check it out from your local library, when it’s available, and hope you finish it before it’s due back.

Imagine you can get the best-seller for only $5 in a version printed in disappearing ink. Would you mind using a credit card to pay a small fee to the publisher to keep the ink from disappearing while you read the book? If you shared the book with a friend, would your friend mind paying a fee to the publisher, too? Would either of you mind that the publisher knew what you were reading, where you lived, or anything else he might care to learn about you by accessing your credit record? Would you mind if he built up a “profile” of you based on your reading habits? Would it bother you if the publisher sold this information? And if you decided you liked the book well enough to make it a part of your permanent library, would you mind paying a larger fee to have the disappearing ink converted to a more lasting variety?

If we’re talking DVD movies instead of books, Circuit City is betting $130 million that the answer is “No.” On September 15, the home-electronics retail giant announced a new twist on the Digital Versatile Disc that it hopes will take the video rental market by storm. Called DIVX, the format claims to alleviate both the film studios’ copyright problem and what designers of the new system see as an enormous inconvenience to consumers: the necessity of having to return rented videos.

Here’s how it works: 1) Consumers must first buy a DVD player modified for the DIVX system—with inboard modem and other circuitry—at an estimated extra cost of about $100. 2) They must connect their phone lines to the DIVX player so the player can communicate with a central computer at Digital Video Express, the name of Circuit City’s new business. The player will store in memory a record of all DIVX playing activity and transmit it twice daily to DIVX. 3) They must buy, at a price of around $5, a DIVX-encrypted disc to play in the machine. 4) When the DIVX player’s Play button is first
Disintegrated.

The performance of integrated amplifiers is compromised for all-in-one convenience. Integrated amplifiers are not equipped with the heavy-duty, high current, high voltage power supplies available in the best separate power and preamplifiers. First of all, there just isn’t enough space. More importantly, there are technical limitations. In an integrated amplifier, such supplies would generate unacceptable levels of heat and hum. And the high signal levels found in the power output stages create a source of noise, crosstalk, and preamplifier instability. Obviously, heat and noise-generating elements shouldn’t be operating in close proximity to the preamplifier circuits. However, this is exactly where such elements, scaled down-to be sure, are found in integrated amplifiers.

Demonstrably superior quality, along with flexibility, is what Adcom now offers in two significant new components: The GFA-5802 power amplifier and GFP-750 preamplifier.

In the GFA-5802 we chose a classically simple circuit topology. Two high capacity transformers provide superb isolation between sensitive input stages and high current output sections. A massive toroid transformer with dual secondary windings, high current regulators, and enormous quick response storage capacitors provide all the current necessary for unparalleled clarity even under the most difficult operating conditions. MOSFET (Metal Oxide Semiconductor Field Effect Transistor) devices are widely praised by knowledgeable audiophiles for their unique combination of solid state dependability, dynamic capability, and tube-like smoothness. Each channel uses eight carefully matched pairs to produce 300 watts per channel into 8 ohms and 450 watts per channel into 4 ohms. The GFA-5802 also includes switchable balanced (XLR) and unbalanced (RCA) inputs and dual sets of heavy duty, gold plated, five way binding posts ideal for biwiring.

The GFP-750 is a purely passive attenuator switcher or, at your option, an active preamplifier. In passive mode, the signal sees only input switching and the high resolution attenuator. In typical Adcom fashion, the GFP-750’s massive high current power supply features a large toroid transformer with multiple secondary windings for each channel. Specially chosen storage capacitors ensure responsive voltage supply to all active elements. For active gain functions, it offers true differential balanced audio signal paths, with MOSFET devices. The GFP-750 features remote control, balanced (XLR) and single ended (RCA) inputs for CD as well as single ended inputs for four additional line level analog sources. Independent balanced and single ended outputs allow easy interface with almost any amplifier.

We’ve achieved something that you can appreciate even without a technical background. Value. Adcom components provide real value by raising the performance level our customers can expect from their investment. We don’t subtract quality for convenience, we add performance to build value.

Goodbye integrated.
Hello Adcom.
pushed to spin a particular disc—today, tomorrow, or next month—a DVE account is automatically established for the player's owner, and a 48-hour countdown-to-termination begins for that disc. For a "standard rental fee" billed to a credit card, the "owner" of the disc can watch it as often as he wishes during the two-day period, after which the disc will be turned off by DVE central. (It may then be used as a decorative coaster or miniature Frisbee.) Should the owner wish to watch it again after the 48 hours have elapsed, he will have to pay a new rental fee. So will anyone who borrows the disc. The rental fee applies only to one particular disc in one particular machine. A higher fee—presumably, one that will approach the retail price of the non-DIVX-encrypted disc—will convert the DIVX disc to a permanent, non-self-destructing medium.

Important note: DIVX discs will not play in standard DVD players, although standard DVDs will play in DIVX machines. From the information available now, it appears that DIVX discs converted to "permanent play" will not operate in standard players either. Each disc, and each player, has a digital ID or address. The coding changes that convert the disc to permanent play take place in the central computer at Digital Video Express, not on the discs themselves. It's not clear if permanent-play DIVX discs can be used in DIVX machines other than the one belonging to the disc's owner. It's also not clear if the owner of one disc and two machines must pay separate rental fees if he plays the disc in more than one machine.

If the foregoing seems a bit hazy, remember that the whole DIVX scheme was hatched by lawyers eager to find a way to reinforce the DVD's already rather rigorous copy-inhibition. Circuit City is a 75% owner of Digital Video Express. The remaining 25% is owned by the Los Angeles entertainment law firm of Ziffren, Brittenham, Branca, and Fischer. Once it is fully operational, DVE will have technical and marketing people on staff at ZBB&F, as well as a technical center in Santa Clara, California, and an administrative center in Herndon, Virginia.

DIVX discs will not play in standard DVD players, although standard DVDs will play in DIVX machines.

Video rental outlets and other retailers stand to make about one dollar for every DIVX disc they sell, according to DVE's informational Website (www.divx.com/home.htm). Digital Video Express will collect an unspecified "standard rental fee," a portion of which will be paid out to the film studio. As of this report (September 19), DVE had lined up hardware support from Thomson Electronics, Zenith, and Matsushita; and software support from film studios SKG DreamWorks, Paramount Home Video, Universal, and Disney's Buena Vista. The four studios agreed to ship DIVX "day and date" with its VHS equivalent. Films will also be issued as standard DVD for sale or rent. There is also an unlimited-play DIVX-gold, which offers the studios "even better copy protection." Any consumer benefits from DIVX-gold discs are not apparent from the available information. Various sources claim that 100 titles will be available "soon," and as many as 500 by this time next year.

Three electronics manufacturers and four studios isn't exactly a universal mandate, but it's a start. Whether people will buy into this scheme—complicated, expensive, a little paranoid—in sufficient numbers to make it fly is anybody's guess. The studios, prodded by a battalion of entertainment attorneys, are scared to death of the possibility of wide-scale duplication of their products. That threat, of course, doesn't come from Joe Consumer. Professional pirates are going to do their nasty business no matter what. Encryption schemes and copy-inhibition codes can and will be defeated. At the very least, enterprising pirates will simply make very-high-quality analog copies of blockbuster movies and hit tunes, convert the analog back to digital, thereby stripping out all encryption, then proceed to duplicate ad infinitum. It's that simple.

The truth is that the average consumer probably isn't all that interested in pirating films, especially when they can be purchased for 20 bucks apiece or rented for three. The high cost of recordable discs precludes it anyway. The convenience of not having to return rentals seems a vastly overblown benefit. On the other hand, almost no one has ever gone broke overestimating the American public's appetite for disposables. The really sorry development here is that the DVD—the glue that promised to hold together the convergence of the whole electronic world—is already fragmented before it's even out. Net-connected readers can learn more at www.DVIDresource.com.

RUSSIA

Hyperion Knight

"If you think I'm good, just wait till you hear Richter!" said Emil Gilels on the occasion of his own American debut in 1955. Van Cliburn, returning from his triumph in the 1958 Tchaikovsky competition, described his encounter with Richter in the former Soviet Union: "It was the most powerful playing I've ever seen in my life." Yet the Russian pianist was rarely heard in America. Classical pianist Valentin Ashkin will attempt to reverse that trend when he makes his American debut with the Russian National Symphony Orchestra (的办法) Friday, November 1, 8:00pm; Symphony Hall, 20 Election St., Boston. (617) 628-2787. And pianist Anna Fedorova, another Russian pianist who has recorded with the New World Symphony, will perform with the Russian National Symphony Orchestra under the direction of Valentin Ashkin at Symphony Hall, Boston, November 1, 8:00pm. The program will feature Beethoven's Piano Concerto No. 1 in C Major, Op. 15, and Schubert's Piano Concerto in B-flat Major, D. 960. For more information, call (617) 628-2787.

A list of events is available at www.stereophile.com.
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RA970BX Integrated Amplifier

"...the RA970BX is simply so exceptional, regardless of price, that it seems more a product of some audio deity than a human. The gods were smiling and the universe in order the day Rotel designed this monster."

The Audio Adventure, Volume 1, Issue 2, Nov. 1994

RB990BX Power Amplifier

"If I were doing a blind test, I’d swear the 990 was a Class-A amp in the plus three grand bracket."

Mark Block, The Audiophile Voice, Volume 2, Issue 1

RCD990 Compact Disc Player

"The performance of the Rotel RCD990 is breathtaking. It would surprise me very much if you could get anywhere near the sound quality with CD separates for under $2000. Maybe $3000... Thank you Rotel."


RA970BX Integrated Amplifier

"With products like the RA970BX available, there’s absolutely no reason for anyone to buy mass-market junk... The RA970BX proves you can get true high-end sound for the same price as mid-fi."


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heard.” As with Liszt in the 19th century and Horowitz in the 20th, the anticipation of Richter’s playing grew in proportion to the delay in his initial appearance before Western audiences, creating an aura of mystery surrounding his playing. In the meantime, a steady trickle of recordings from Eastern Europe and Russia, including a peerless performance of Mussorgsky’s Pictures at an Exhibition from a 1958 recital in Sofia (Philips 420 774-2), heightened the suspense. While clearly of the Russian virtuoso school of pianism—his technical achievements were overwhelming— Richter came to be known for his uncompromisingly serious approach to music. He declined to play any transcriptions, and the works of Bach, Beethoven, Schubert, and Schumann were central to his immense repertoire.

When Richter finally made his American debut in a series of five Carnegie Hall recitals in 1960, he proved to be everything the public had hoped for, but his style presented a challenge to the tastes of many critics. Born in 1915, Richter was a child of the Soviet world, and his playing did not have the rich, cosmopolitan sensitivities of a Horowitz or Rubinstein. His touch was often the same in Beethoven or Schubert as it was in Prokofiev, and his explosive dynamics were not tailored to the Western sense of period or style. Nor was he a showman: he rarely acknowledged his concert audiences—encores were reserved for concerts in which he felt he had not played well—and Harold Schonberg described his performance style as “essentially introspective.” Richter’s long incubation in the East, however, gave him a conviction and command that were hypnotic to his new audiences. Few artists have gathered such a fiercely loyal following, and his recordings from the 1950s and ’60s continue to grow in stature.

Truly the last of the “legendary” pianists, Richter’s recent passing at the age of 82 leaves the pianistic world with few icons. He was not, however, from the lineage of “romantic” or “heroic” pianists. Like Glenn Gould, he was a 20th-century phenomenon: an artist of complete conviction whose tonal world was informed by the more brilliant, tactile sound of piano playing in modern music.

Truly the last of the “legendary” pianists, Richter’s recent passing at the age of 82 leaves the pianistic world with few icons.

Fortunately, the memory of Richter’s art will be well preserved on recordings. Many of the performances he taped for RCA in the early 1960s are in very good sound and already enjoy “classic” status. Among these, his Brahms Piano Concerto 2 with Leinsdorf and the Chicago Symphony, coupled with the Beethoven “Appassionata” Sonata (RCA 56518-2), are staples of his discography. Also in good sound is his dashing account of the Beethoven Piano Concerto 1 with Munch and the Boston Symphony (RCA 6804-2-RG). Other famous concert collaborations include his live performances of the Liszt concertos with Kondrashin and the London Symphony, albeit in much weaker sound (Fonit Cetra CDE 1011).

The recent Melodiya/BMG tribute to Richter included hissuperlative recordings of two less well-known works: the Tchaikovsky Sonata in G (Vol.9) and the Schumann Humoreske (Vol.4), as well as superb live performances of the Beethoven “Pathétique” and “Appassionata” Sonatas (Vol.2). Other recent collections on Philips and Praga have made dozens of Richter’s performances freshly available; we can be certain that his timeless art will be discovered by listeners for many generations to come.

UNITED KINGDOM

David Patrick Stearns

Sir Georg Solti’s death on September 5, 1997 is turning out to have a much more thought-provoking quality than one ever would have guessed. After the passing of Vladimir Horowitz and Herbert von Karajan, the world lamented and moved on, looking forward to the young turks who might fill their niches or create new ones. With Solti, one has a feeling of falling off a cliff—not because he was a greater artist (he was once the junior member of the trio of great postwar conductors that included von Karajan, and Bernstein), but because of his talent, reputation, and ultimate longevity. For these reasons, too, Solti became an island in the increasingly commercialized recording industry.

Solti represented a victory of substance over glamour. Even at the height of his fame, during his celebrated tenure with the Chicago Symphony Orchestra, he was clumsy and bustling, crouching on the podium, springing up and making odd scoops with his shoulders. In documentary films, such as The Golden Ring—The Making of Solti’s Ring (about his famous premiere recording of Wagner’s four-part Ring Cycle—Polygram LaserDisc London 440 071 253-1), we saw something even more frightening: Solti’s face. With his teeth clenched and head bobbing, one wondered if an exorcist was in order. But that was all part of how he generated his famous musical excitement; who cares how it looked.

When it came to the business of clas-

C A L E N D A R

- Wednesday, November 5, 7-9pm: Audio Consultants in Hinsdale will host Henry Fogel, president of the Chicago Symphony Orchestra, who will discuss the newly opened Symphony Center, how to listen to music, and related subjects. Call (630) 789-1990 for reservations.

MICHIGAN
- Saturday, November 22, 7-10pm: Accutronics (324 South State Street, Ann Arbor) is hosting Carl and Marilyn Marchisotto of Acarian Systems for a demonstration of their new LOTUS SE speaker. For reservations, call (313) 741-4444 or e-mail Accutronics@aol.com.

MINNESOTA
- Thursday, October 23, 6pm: Representatives from Sonic Frontiers will be at HiFi Sound Electronics (1226 Harmon Place, Minneapolis) to discuss and demonstrate the newest products in the Sonic Frontiers and Anthem lines. For more information, call (612) 339-6351.
- Thursday, October 30: HiFi Sound Electronics (1226 Harmon Place, Minneapolis) will host a seminar by Carl Marchisotto, president of Acarian Systems, on speaker design and the new Alon Lotus and Adriana speaker systems. For more information, call (612) 339-6351.
A great musician brings the fire of inspiration to the flawless execution of fundamentals.

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The VK-D5 is fully balanced in both the digital and analog domains. Even the current-to-voltage converter employs a differential Flying I-V circuit using discrete Vishay resistors. Six plate-loaded triodes in the analog stage deliver up to ten times the current of typical buffered outputs.


Hear why the VK-D5 has been so eagerly awaited, and why so many knowledgeable listeners have placed advance orders. Visit your BAT audio specialist today.
sical music Solti played ball—to a limited extent—with the record companies. He admitted to compromising on casts and soloists. He recorded scores cold, never having previously conducted them. He even allowed record label marketing people to dress him up. For one album cover, they put him in a silky red fedora. On another, time-lapse photography made his baton look like a miniature hurricane. But props and concessions aside, Solti made lastingly, evocative recordings, many of which remain among London/Deccas best sellers.

Far from being good at everything, Solti, in fact, had a narrowly defined interpretive personality. Though his repertoire was extensive—but perhaps larger and more modern than either Leonard Bernstein's or Karajan's by virtue of his longevity and restless determination to keep growing—the fiery Hungarian's approach invariably involved nervous, bossy rhythms and orchestral outbursts that might have seemed limiting had they not so frequently been a surprise. His approach and vision worked marvelously with Mahler and Wagner but his Mozart sometimes imploded.

But even in his lesser moments, Solti was supremely distinctive and consistently compelling. Thus, all the packaging, marketing, positioning, and timing that the recording industry has become obsessed with was not the huge factor here that it is in so many careers. London/Decca's approach to Solti seemed simple: Capture him on tape as well as technologically possible and get it to the public soon. How many artists today can transcend business matters to that extent? Cecilia Bartoli, Esa-Pekka Salonen, and too few others.

To go back to the precipice that Solti's death has engendered—why aren't there more potential Soltis waiting in the wings today? It can't be that they aren't being made or trained anymore. Maybe the demands of the business (think: red fedora and declining record sales) drives them into semi-retirement, like conductor Carlos Kleiber. Or maybe because being a classical music celebrity now involves so many things peripheral to classical music, they're somehow destroyed before their confidence and artistic vision are fully formed.

**UNITED STATES/JAPAN**

**Jonathan Scull**

I attribute the beginnings of the obsessive phase of my high-end journey to a used Conrad-Johnson PV-5 and MV-50 (what a dreamy combo). But it actually began earlier with a Luxman 40Wpc receiver. I don't remember the model number, but it was a beauty. It had silky, rich-feeling controls, and the fit'n'finish were superb.

So it was with some particular interest that I heard that Luxman, now owned by Korean giant Sumsang, is returning to the US market. Their intentions are no less than a full assault on the very gates of the High End as we know it.

Cool. (Possibly hot.) To hear more of their plans, I sat down with president of Luxman Electronics Steven Teachout, managing director Jack Muroi, US marketing manager Harry Murakami, and vice director of product planning Kinji Shinbo.

They spoke with pride of Luxman's 70-year history as a perfectionist electronics house with roots in early radio. Their history is important to them. Steve Teachout recalled the success of the 10Wpc SQ-38 integrated amp I remember from the '60s, and the mid-'70s M-6000 power amp I listarfed after when I took home the receiver.

Let me tell you something about the Luxman product line. Normally in a report such as this, I'd start at the lower end of the scale to avoid RSS (Reader Sticker Shock). There you'll find such worthy products as the 1-700S 20-bit HDC1* player ($2500), and the tube SQ-38 Signature integrated amp—a contemporary spec'd update of the original including a MM phono input. It uses two EL34s per side for 30Wpc push-pull into 6 ohms.

But Luxman strongly represents itself as a company driven from the top down. They don't just construct one statement product to use as a marketing tool to push mid-fi muck. They start at the highest possible level and trickle the technology down from there.

Shall we start at the top, then? Take the $18,000 fully balanced C-10 control preamplifier. (Hope to put it up against the $19,000 YBA 6 Chassis sometime soon.) Let's talk about the volume control. Jack Muroi guessed at an unusual device he'd plunked down in front of me. This was the Super Ultimate Attenuator, or ATT to its many friends and admirers. Each one takes one man one full day to fabricate, at a $1000 cost to Luxman.

It's a totally balanced 4-ganged, 58-contact attenuator with switched fixed resistors. Doing the math, that works out to 464 1/4-watt carbon-film resistors. It's an impressive structure, the craft apparent in each wonderfully precise solder joint.

The C-10 also features a circuit called CSSC (Complementary Single Stagger Circuit). The technical paper describes in great detail how this unique topology delivers a wideband, high slew-rate sig-

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**CALENDAR**

**MISSOURI**

- Sunday, November 21: Joe Abrams of MIT, John Russell of *Classé Audio*, and Greg Evans of *Thiel* will discuss and demonstrate new products and MIT's OP² system at the *Doubletree Hotel* in St. Louis. Call (217) 355-8828 for more information and reservations.

**NEBRASKA**

- Friday and Saturday, November 21 and 22, 10am to 6pm: *The Sound*

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**NEW JERSEY**

**Audio Connection** (615 Bloomfield Avenue, Verona), is presenting the following series of seminars and demonstrations on Thursdays from 5 to 9pm. Call (201) 239-1799 for information and reservations, or visit www.audioconnection.com.

- October 23: Dennis Had of *Cary Audio Designs*. A drawing for a free Cary SLA-70 amplifier will be held at the end of the session.

- October 30: Charles Hansen of *Ayre Acoustics*

- November 6: Peter Bohlack and
Look inside the new KEF Reference Series Model Four and you'll understand why it has been hailed as one of the finest loudspeakers in the world. You'll find brilliantly innovative design and advanced features found on no other speaker. No wonder it has met with such critical acclaim.

"...In the end, I was delighted with the performance of the KEF Reference Four..."
"...you won't be disappointed with the result..."

"...This speaker has a degree of slam and overall dynamic range associated with the best at two or three times the price..."
Martin Colloms, Hi-Fi News

"...The Model Four's response within 30 degrees of the axis is extremely uniform in both the horizontal and vertical planes; KEF's Uni-Q® speaker systems are easily the best I've measured in this respect..."
"...be prepared to enjoy yourself a lot..."
D. B. Keele, Audio magazine
nal path. The preamp also employs what's called an OD (Optimized Dual) Beta Circuit. This revolves around NFH (Negative Feedback) as it's applied to both the AC and DC components of the power supply. The unit is further distinguished by other interesting build elements too numerous to go into here.

The C-10 is joined by the C-7 preamp, which packs a heavy dose of high technology into a lifestyle-friendly $5500 package. Purists may blanch at the tone controls, but there is a bypass switch. Like all new Luxman gear, it offers an array of single-ended RCA and XLR balanced inputs and outputs. Both preamps also offer phase reversal and something called a Line Phase Sensor, this last surely an idea whose time has come.

Then there's the M-10 stereo power amp at 250Wpc into 8 ohms for a cool $9500. Rooting around in the literature, I found this surprising tidbit: "It uses huge custom-made 22,000µF electrolytic capacitors, two each channel. These are not conventional capacitors but specially customized 'instantaneous discharge' types originally intended for strobe flashes. Besides large capacitance and superior instantaneous discharge response, they help greatly reduce power-supply impedance." Ah-ha…

There also are the impressive looking M-7 150Wpc stereo amp for $5000, the L-50SS remote-control integrated amp offering 70Wpc for $2600, and its sister L-507S at $3600 for 100Wpc into 8 ohms. The amps thoughtfully offer plenty of inputs, including MM and MC phono.

Luxman products seem built to a very high standard indeed, with thick brushed-aluminum faceplates and cosmetics to die for. Big, juicy meters, too. Other niceties abound, including custom electrolytic and copper-styrene capacitors. Relays and other critical parts are subject to rigorous testing. Listen to this: "Capacitors are carefully auditioned on a reference capacitor evaluation system and modified continuously until their sound quality matches what we have in mind."

Bravo, Luxman — welcome back. I'd say it looks like an impressive effort aimed squarely at the traditional two-channel high-end audio market.

**UNITED STATES**

**Jon Iverson and Barry Willis**

**Barry Willis:** On July 28 and 29, Jon Iverson and I descended on the IEEE 1394 Developers Conference at the Fairmont Hotel in San Jose. Among the hundreds of participants who paid up to $700 each to attend, we were the only ones sporting red press badges. We were also the sole representatives of the high-end audio industry. Read that sentence again — it may be the most important one in this whole report.

**Background:** 1394 isn't a significant date in history, but a new "plug'n'play" IEEE standard for computer and home-entertainment equipment. "FireWire," as it is also known, consists of a high-speed, wide-bandwidth distribution system, standardized connectors, cables, and operating software that will enable any device in any system to identify itself, integrate, and operate in that system regardless of where it is connected: universal compatibility.

For example, a small security camera plugged into a 1394 home system will automatically have an address in that system and begin working. Unplug it, move it to a different location, plug it back in, and it works. Ditto for any audio/video recorder/player, memory storage device, display, terminal, or digital active loudspeaker. Nothing needs to be reconfigured in the operating system, even though individual devices in it are added or subtracted. In addition, everything in a FireWire system can be "hot-plugged" — installed while the system is on — without damage, solving a persistent problem for both analog and digital equipment.

A 1394 system — the system of the future, if what we saw in San Jose pans out — will be a truly all-purpose information and entertainment system: a dwelling's brain and nervous system, in which data can flow from one part to any other part. That's all very interesting, you may be thinking, but what does it have to do with high-end audio? At the moment, almost nothing. And that's the problem.

**Jon Iverson:** The high-end industry has a long tradition of perfectionism whatever happens to be the dominant format. When vinyl was king, we squeezed the most out of it with some really amazing turntables, tonearms, and cartridges. Even cassette tape was taken to a pretty high level by companies like Tandberg and Nakamichi. CD has been taken far beyond what its original designers intended or expected, and almost entirely by the high-end industry. But this industry has never been present at the birth of a new paradigm. It's always played a reluctant game of catch up.

No high-end audio companies were at the conference, but when this standard takes off, they will all be looking for an angle. In truth, there was one audio company present — not strictly high-end, or at this point even mass-market, but, surprise surprise, it was a new audio startup called PAVO. Begun just a few short months ago, they were showing a little black box that could grab the audio flying around on the FireWire bus and convert it into those vibrating molecules of air we call music. The contraption even had an "AC-3 In" jack on the back. The intent of their technology was to build the decoders and amps directly into the speaker,

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**CALENDAR**

- **Thursday, November 13, 6-9pm:** _Audio Nexus_ (33 Union Place, 2nd floor, Summit) will host Albert von Schweikert and David Kersh of _Von Schweikert Research_ for a demonstration of their new VR-6 loudspeaker and home-theater products. For more information, call (908) 277-0333.

- **NEW YORK**

  - Each month: For information on the monthly meetings of the _Musical-
The importance of a subwoofer in the new Dolby Digital AC-3 system

The future of movie sound in the home—and many believe music as well—is Dolby Digital AC-3. Unlike Dolby Pro Logic, Dolby Digital features 5 full bandwidth channels, plus a dedicated low frequency effects channel that delivers additional bass to the subwoofer. Which is why it almost seems like Dolby engineers had Velodyne in mind when they created Dolby Digital.

In addition to performance that Home Theater magazine called "breathtaking," all of our subs incorporate a “Subwoofer Direct” feature which allows you to by-pass the internal crossover for direct connection to this low frequency effects channel in Dolby Digital decoders and receivers. So you get bigger, louder and more physical bass—the Dolby Digital difference you can hear and feel.

Why a subwoofer has to be future ready

HDTV, DSS, DTS, AC-3, DVD, DVD-ROM. Terms from the brave new world of home entertainment, yet ones that can easily confuse even the most savvy consumer. So it’s good to know that, no matter what new technologies come along, a Velodyne subwoofer will never be obsolete.

All of our subwoofers, from our entry level VA Series up to our top-of-the-line F Series, are "future ready." With features ranging from our patented High Gain Servo Technology that reduces distortion to less than 1%, to our combination of forward firing active drivers and downward firing passive radiators, Velodyne subwoofers are designed to handle the demands of movies, music and multimedia. Today and tomorrow.
which is then plugged into the network: no external amps, no D/A converters, no messy cables to configure. Just 1394 and a power cord.

BW: Bob Stuart! Where were you? Of the many established manufacturers represented at the conference, only Sony and Philips were in any way connected to the audio world, although we heard that Yamaha and Harman International were "interested." Their interest, of course, means that a good number of mass-market audio products will soon come Fire Wire-equipped. And somewhere down the line, in six or seven years, high-end manufacturers will wake up and realize that, once again, they're out of touch.

JI: Exactly. Every once in a while technology comes along that spawns a new generation of companies that were previously only a glint in some futurist's eye. When CD's gained critical mass, an entirely new "high-end" digital audio industry was born. New companies sprouted quickly and successfully. Those companies are now the establishment, and it's time to shake 'em up a bit. Or a byte.

Barry, I'll predict right now that, with maybe one or two exceptions, the tweak audio dinosaurs are not going to embrace what is about to happen until they have to. In the meantime, this is the era of gig opportunity for the young sprouts! If you want to start a high-end company from scratch, now is the time to do it.

BW: Jon, as you mentioned, the High End has a tradition of perfecting whatever dominates the mass market. If, 10 years from now, most consumer electronics are 1394-compatible, the remaining high-end audio companies will begrudgingly adapt. We were disappointed not only to find zero representation of audio manufacturers at this conference, but also to find minimal awareness of the importance of quality audio among the many computer folk we spoke with.

We lost count of the number of engineers who squinted at our badges and said "Stereophile? What do you guys do?" When we explained the magazine and its readership, we were greeted with mute, uncomprehending stares. We might as well have introduced ourselves as representatives of the Albanian Oxcart Preservation Society. The nearest approach to audio was made by Apple Computer, whose stylish multimedia computer was packaged with a matching desktop Bose speaker system.

"Bose," said an eager young Apple engineer. "Does it get any better than that?"

JI: We both winced and swallowed hard when we heard that one. But back to the new frontier. Up until now, we've all lived on little entertainment islands—especially us high-enders. Which means we have to jump on a ship, go to the CD mall/electronics emporium, and score some supplies every once in a while. Even you folks who do your shopping via two-way radio (telephone/computer) have to wait for the supply boat to hit your shores with your new music disc a couple of days later.

But the big bucks are investing in mainlining fat data pipes right past your door and into your home or business "network." We are entering the consumer electronics era of "The Network is the System." Let's clarify that we're not talking about new "amazing" content options like "interactive TV." We're talking about new ways to distribute and control the use of content.

TV—cable, antenna, or satellite, or commercial radio—is currently like the Book-of-the-Month Club: you grab what they have to offer when they offer it. This is going to change; our home networks will eventually be connected to the universal content library, from which we'll check out the stuff we want when we want it at the quality level we prefer. Think high-end Internet. Right now, we consumers are a group of hunters and collectors, but evolution (generally considered a good thing—helps sweep the decay out the door) is taking place. And what the consumer electronics/computer biz has just contracted is the "networking" gene.

BW: In a way, it's kind of baffling that the computer industry hasn't already embraced high-end audio as a logical extension of itself. But maybe that's coming. I mean, Apple's prodigal son, Steve Jobs, is rumored to be a Kreil/Wilson owner.

JI: They use Wilson Audio speakers in their Pixar screening room! So far this gene has been popularized as "convergence," which threatens to replace all of your audio components with computers. But the point here is not to fear computers—they (or some audio equivalent) will just be a tool to get you on the network. With FireWire up and running in your home, whatever has the little 4- or 6-pin 1394 jack will be talking to everything else, including your toaster...

I can hear audiophiles crying, "Hold it right there—that's not high-end audio."

Our home networks will eventually be connected to the universal content library, from which we'll check out the stuff we want when we want it at the quality level we prefer.

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**C A L E N D A R**

Nemzer at (718) 237-1094.

**Innovative Audio** (150 East 58 Street, Manhattan) is sponsoring a series of fall seminars featuring audio innovators. For more information, call (212) 634-4444, or check www.innovaudio.com.

- **Saturday, October 25:** David Wilson of Wilson Audio
- **Thursday, November 6:** Jim Thiel of Thiel
- **Saturday, November 8:** Geoffrey Poor and Victor Khomenko of Balanced Audio Technology

**Audio Technology**
- **Thursday to Saturday, November 13 to 15:** Chris Koster and Chris West of Naim
- **Wednesday, November 5, 7-9pm:** The Listening Room (495 Central Park Avenue, Scarsdale) will host Geoffrey Poor of Balanced Audio Technology for a demonstration of B.A.T.'s new VK-D5 tube output CD player.
- **Thursday, November 13:** The Musicalaudiophile Society of New York City will host David Carpe, vice president of information and technology at Melos Audio, for a demonstration of the new Max 3R DAC and the High Current SE-75s mono blocks. As always, the meeting will be preceded by a banquet in Chinatown. For information and reservations, call David Nemzer at (718) 237-1094.
- **Thursday, November 13, all day:** Representatives from Sonic Frontiers will be at Sound by Singer (18 East 16th Street)

**Stereophile, November 1997**
20 Years of Attention to Detail

Since 1977, every detail of THIEL loudspeakers, from the shape of the driver diaphragms to the construction of the form-follows-function cabinetry, is thoroughly engineered with innovative design techniques and premium materials to provide the highest level of sonic realism and an extraordinary musical experience...a 20 year tradition of award-winning excellence in the art and science of loudspeaker making.

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Visit the THIEL Web Site at http://www.thielaudio.com
The point is that a FireWire network is scalable—meaning that your toaster commands and multichannel tweak audio can coexist and run around your house on the same cable: the FireWire cable. Once the market gets rolling and huge numbers of folks are downloading their audio/video from that cable or satellite modem (owned by Bill Gates or Rupert Murdoch) and sending it out over FireWire to their surround systems, somebody will say: "Hey we can make this stuff high-end if we just..."

...and Boom—the new tweak audio industry will be launched.

**UNITED STATES**

**John Atkinson**

Bel Canto Design, the manufacturer of an excellent-sounding single-ended tube amplifier, has moved. Their new address is Bel Canto Design, Ltd., 212 Third Avenue North, Suite 446, Minneapolis, MN 55401. Tel: (612) 317-4550. Fax: (612) 317-4554.

Erstwhile Audiofile Systems western sales manager and Linn LP12 setup expert Steve Daniels has joined The Sound Organisation as a partner. He will be responsible for dealer sales and support. The Sound Organisation distributes JPSI loudspeakers and Soundstyle and Sound Organisation A/V furniture in the US. Tel: (214) 692-6490. Fax: (214) 692-8745. E-mail: steve@soundorg.com.

**UNITED STATES**

**Wes Phillips**

Northstar Leading The Way, Inc. has been appointed the exclusive US and Canadian importer and distributor for the Siemel line of electronics from France. Northstar Leading The Way has also been appointed Canadian distributor of Jadis electronics and Cabasse loudspeakers. Dealer inquiries should be directed to Northstar at: 185 Suttle Street, Durango, CO 81301. Tel: (970) 259-6722. Fax: (970) 259-6727.

**UNITED KINGDOM**

**Paul Messenger**

The scenario of the specialist manufacturer working away to perfect the engineering of one particular component in the hi-fi chain is looking increasingly nostalgic. Back in the 70s in Britain, the considerable success of Linn/Naim combination systems had much to do with the whole being much more than the sum of its parts. Substitute any of the bits, and there was a good chance of losing the magic of complete system synergy. Accordingly, many one-time component specialists have since grown into makers of full systems, prospering as much from the popularity of integrated remote control and styling coherence as from the virtues of performance synergy.

Tom Evans has been designing and building individual components for various brands for the past decade, building up a very impressive résumé along the way. Highlights include the Michell Iso and Elecito amplifiers, the Trichord CD-clock modifications, and the UK-tweaked Pioneer Precision series components.

But Evans is acutely conscious that an isolated component will achieve its design potential only if the other components in the chain are working together and in the same direction. Accordingly, he’s joined forces with like-minded speaker builder Paddy Handseome, whose Sonolith models have already built something of a cult following. Together they’ve founded Acoustic Precision to launch products under the Eikos brand.

Appropriately, eikos is Greek for “likeness to truth” (I’m told). (Any similarity to Linn’s Epok tonearm is entirely coincidental, Eikos being a corruption of Eikos, emphasizing Linn’s Scottish engineering tradition.) The full Eikos chain isn’t quite complete yet, but the CD and reservations.

- Sunday, November 23, 2-6pm: The Gotham City Audio Society will hold its fifth annual Audio Flea Market at 202 East 77th Street (2nd floor) in Manhattan. Buy, sell, or trade components, accessories, LPs, CDs, or just mix with the crowd. Vendor tables available. For more information, call (212) 629-1933.

**NORTH CAROLINA**

- Thursday, October 23, 6-8pm: Audio Advice (6701-101 Glenwood, Raleigh) is hosting an open house with Garth Leerer of Musical Surroundings. Garth will discuss the new phono cartridges from Benz Micro Switzerland, demonstrate the Graham tonearm for the Linn LP-12, and have other analog products on hand. Call (919) 881-2005 for reservations.

**OHIO**

- Thursday, October 23: Progressive Audio (1764 North High Street, Columbus) is presenting an evening...
The Krell® Full Power Balanced 600 power amplifier and the Krell® KAV-300i integrated amplifier establish new standards for performance and design. Both amplifiers are among the few products holding the distinguished Class A rating from Stereophile.

A fully regulated output stage in the Full Power Balanced 600 enables the amplifier to produce up to 2400 watts per channel of clean power for open, effortless sound.

Complementary, discrete circuitry in the KAV-300i delivers 300 watts per channel of pure Krell-quality sound.

The robust designs of all Krell® Full Power Balanced and KAV-Series amplifiers feature proprietary output devices that are yet another hallmark of Krell® design.
player (£1850) has been building itself quite a reputation among UK dealers in the last few months, while first samples of the decidedly radical FS1 speaker (£800) have just started to appear. Plans are already advanced for an integrated amplifier at a price similar to that of the CD player, though Evans is still figuring out the best way to implement the volume control (something involving a DAC and optical coupling is in the cards). The system is currently being demonstrated using Evans' most recent creation, the much cheaper, UK-only Pioneer A-300R Precision amplifier.

Phase linearity is the core Eikos philosophy, from DC up to as high a frequency as possible, on the basis that this is the only way to preserve the subtle timing cues that create a genuinely solid and substantial stereo image.

The CD player started out as a Pioneer PD904 but has been heavily modified: the more than 100 component changes on the main board include special clocking, an extra DC-coupled analog “eliminator board,” and a heavy anti-vibration base.

The speaker is more interesting still, especially in its use of a very-high-density expanded polystyrene for the enclosure. In the interests of phase linearity it’s a single-driver design, and uses a Ted Jordan metal-diaphragm drive-unit with a 92mm “controlled flexure” cone. The enclosure construction has something in common with that of a surfboard: high stiffness combined with low mass (and hence, low energy storage).

Internal volume is a mere 4.5 liters, although the box is more than twice that size — the walls are unusually thick — yet it weighs less than 10 oz. Constructed in front and back moldings joined around the middle of the sides/top/base, the sections are dipped to add a plastic skin for extra structural stiffness, and the inside is shaped to avoid focused standing waves and further reinforce edges and corners.

The basic speaker parameters would seem to suggest a preference for smaller rooms and close-up listening, and hold out promise of a headphone-like intimacy and coherence. A reviewer friend with the system at home complained that he was just settling down for a peaceful evening with his favorite CDs when his girlfriend insisted on playing hers instead, and compounded the felony by dancing around the room.

**UNITED STATES**

**Barry Willis**

A battle of giants is under way in Washington. Fearing a rash of lawsuits as potential accessories to digital crime, telephone companies and Internet service providers (ISPs) are campaigning for changes in the nation’s copyright laws. Representatives of America Online and the US Telephone Association — whose membership includes biggies like AT&T and BellSouth Corporation — met with the Senate Judiciary Committee the first week in September to complain about the vagueness of current law and the potential hindrance it presents to the growth of the worldwide computer network.

As the law is presently construed, a phone company or ISP can be held liable for damages if its services are used to violate copyrights, whether or not the provider has knowledge of the violation. The Telephone Association and ISPs are petitioning Congress to change the law to exempt them from such liability. They want these changes to be written into legislation presently before Congress that will bring the US into line with the World Intellectual Property Organization Treaty that was signed by most of the world’s nations in Geneva last winter. The terms of the treaty exempt them from liability in most cases of copyright violation. Present law is antiquated and inadequate to deal with the realities of modern technology, claim the petitioners.

Opposing them are two entertainment-industry behemoths: the Motion Picture Association of America and the Recording Industry Association of America. They claim that the threat of potential lawsuits is exaggerated and that present law is flexible enough to address any conceivable problems. MPAA Senior VP Fritz Attaway told the Senators: “The feared flood of infringement litigation has never materialized. This should tell the committee that the incentives provided by the current law are working pretty well to encourage cooperation between copyright owners and service providers in the fight against piracy.”

The deluge simply hasn’t happened yet, Mr. Attaway. The digital tidal wave gains momentum daily: the network adds new members, computer memory grows cheaper; storage devices gain capacity while shrinking in size; and access times and transmission rates continue to accelerate. At some point in the not-so-distant future, this industry will have to deal with a proliferation of near-perfect digital copies, legal or not.

What do stalwart business executives do when they lose control of distribution? Call in the lawyers, who sue everybody in sight. When pirated copies of hot tunes and hit movies pass hand to hand over the Internet while their retail counterparts languish in stores, somebody will be found responsible for the lost revenue, and that somebody better have deep pockets. That’s the logic behind the entertainment industry’s wish to preserve the current law.

The film and music industries have always fought tooth’n’nail against every popular development that threatened their hegemony over the distribution of...
BiFocal series loudspeaker cables allow music to run pristine, essentially untouched by external or internal influences.

The heart of our new BiFocal loudspeaker cables is a unique vibration damping material. This special compound locks the inner conductors in place aggressively reducing resonances. The inner "high frequency" conductors are interwoven, intersecting at precise angles with positive conductors counter rotating the negative. The "low frequency" conductors are precisely interwoven on the outside of the cable. Electrical isolation of the two circuits is accomplished via geometry only, no semi-conductive or metallic screens are used. An additional layer of highly compliant damping material mechanically isolates "high" and "low" circuits.

BiFocal cables represent twenty years of loudspeaker cable development and are a major step forward in bi-wire cable design - technically and musically.
their products. Tape recorders—especially cassette decks, which vastly outsold open-reel machines—were opposed by the RIAA and similar organizations in other countries. Legislation was introduced here, in the UK, and elsewhere to tax blank tape to compensate the industry for lost revenue. When television first became popular in the 1950s, many in the film business thought it spelled their demise. That same industry fought against the VCR, primarily on the copyright-infringement tack, all the way to the US Supreme Court, while the machine sold by the millions.

The industry’s theme in these battles was always the same: resist change and oppose new technology as a threat to its livelihood. But after new technology has won public acceptance, the industry finds a way to turn a profit with it. When the cassette began to outsell the LP, the music industry found to its good fortune that tapes could be duplicated and sold at lower cost and higher profit than vinyl records. The VCR has been an uncalculable boon to the film industry, which failed to anticipate the now-obvious and inevitable development of video rental outlets. Rentals enable many films of marginal quality and/or appeal, which would otherwise be condemned to the purgatory of late-night broadcasting, to eventually break even.

How do you make a silk purse from a sow’s ear? Adapt and innovate. Sounds like a very tired old business slogan, but it’s true. And as applied to the potential offered by the global digital network, it’s exactly what entertainment industry executives aren’t doing. Instead, they’re hoping to hang on to the legal bludgeon in case they need to use it. As the cassette deck and the VCR proved, technological and economic adaptation are more effective and far more profitable than legal opposition. If the entertainment industry is going to move forward with the rest of the world, it must find a way to integrate with new developments. Better now than after the fact, as the case has usually been.

Admittedly, the copyright problem is an expensive and thorny one. By some estimates, American companies lose up to $20 billion annually due to international piracy. If phone companies and ISPs are relieved of their responsibility, they likely won’t feel motivated to prevent the widespread abuse of intellectual properties. That will leave only copyright holders to seek justice. As Mr. Attaway rightly points out, online providers “must shoulder their fair share of this burden.”

Lawmakers want to work out a compromise that will satisfy all involved. Missouri Senator John Ashcroft has introduced some legislation that he hopes will accomplish that goal. In an apt description of the democratic process, his colleague Orin Hatch said, “We’re going to have to get together and butt heads.”

UNITED KINGDOM

Paul Messenger

Rare-earth magnets are by no means new—KEF’s Uni-Q coaxial drivers have been using them for their tweeters for almost a decade—so it’s surprising that the technology hasn’t turned up in more than a handful of other examples elsewhere on the hi-fi loudspeaker scene. Neodymium tweeters are becoming more common, especially on the in-car scene, but until recently I’d encountered only two examples of rare-earth main drivers: from Morel (UK/Israel) and Aura Systems (California).

One reason is certainly cost vs benefits. Rare-earth magnets may offer far superior power/weight and power/size ratios than ferrite, but their power/ cost ratios are much poorer. Most hi-fi drive-units are bought or made by speaker-system builders waging a perpetual war to reduce costs; cutting magnet size and/or weight rarely seems sufficient justification for increasing those costs.

But perhaps there’s also been a lack of imagination. I’ve felt for some time that the bulky magnet structure was an inherent limiting factor in the performance of the typical moving-coil driver. Mounting a flat, hard, reflective top plate—often nearly as big as the cone itself—only an inch or two behind the diaphragm has just got to be a source of unwanted midband coloration. Avoiding this by virtue of an inherently slimmer, deeper magnet structure is one of the possible reasons why some audiophiles prefer the sound of drivers with old-fashioned (and relatively very expensive) Alnico magnets. (I still haven’t heard a dynamic-driver speaker with a purer midband than my 25-year-old Alnico-driven pair of Spendor BCIs.)

I was discussing the above with Craig Milnes of Wilson Benesch (Sheffield, UK), and telling him that I thought the carbon-fiber-shell A.C.T. One speaker was probably driver- rather than enclosure-limited. He replied that WB had come to a similar conclusion, and was already well into a program to develop its own main driver.

Known for its innovative use of new materials and high-tech solutions, Wilson Benesch is looking at several different aspects of driver design and evaluating various options. Woven polypropylene might well form the basic matrix of the cone, while rare-earth magnets are front-runners for the motor system, offering the triple benefits of higher power, reduced “cone shadow,” and reduced stray magnetic fields. Redesigning the motor is leading to a radical rethink the role of the basket/frame, the possibility of mounting the driver from the motor rather than the basket, and perhaps mounting it on a structural element isolated from the enclosure proper. WB plans to show some of the fruits of this work in progress

CALENDAR

Research for a demonstration of how to use Synergistic’s system-dependent cable technology. Call (703) 734-9391 for more information.

CANADA

• Tuesday, November 18, 6-9pm: Representatives from Sonic Frontiers will be at Fairview HiFi (892 Brant Street, Burlington, Ontario) to discuss and demonstrate the newest products from the Sonic Frontiers and Anthem lines. For more information, call (905) 681-1872.

CZECHOSLOVAKIA

• Thursday to Saturday, November 13 to 15: The Czech Audio Engineering Society is sponsoring Prague’s third annual Top Audio Praha 97 high-end audio show. For more information, call 00420-602-374222, fax 00420-2-24256-844, or e-mail http://plzen.eun ct.cz.topaudio .

Stereophile, November 1997
For once, the critics agree.

“This very special amplifier does so much right and so little wrong that it’s almost impossible to describe... the music the VT100 makes is bettered only by two things within my compass—the Reference 600 and life itself... The LS15 recalls the sound of the VT100 in every particular—unruffled, coherent as well as continuous, and highly transparent... it lets music glow from within rather than adding any light of its own.”


“Audio Research has once again taken a clear lead over the competition, giving you sonic performance that others can only envy. With the LS15, Audio Research gives you this world beating performance at a price that is so affordable... it will be a runaway success... After the REF1, the LS15 is the best line section we’ve ever heard, and the most exciting bang-for-the-buck tube preamp you can buy...

The VT100's sonic strengths are so outstanding, and so important to recreating the sound of live music, that they alone make the VT100 objectively competitive with any power amp you can buy, at any price.”


“The Audio Research VT100 amplifier has touched me in a way no other audio component has, and in a way I didn’t think any audio component could... I felt a sense of magic I’d never heard in an amplifier before... Audio Research has raised the bar.”


“Over the years I’ve owned any number of medium-powered, medium-priced tube and transistor amps. The VT100 is, overall, the best I’ve heard. So, I’m going to buy it.”

at the UK Ramada Show (report next month), and hopes to bring the development to market sometime in 1998.

The ear to the ground hears that others are working on applying the potential of rare-earth magnets to main drivers for hi-fi applications, so the Wilson Benesch initiative could be just the tip of the iceberg. A particularly interesting implementation is in Alpine's new top-of-the-line DDDrive in-car hi-fi drivers. Here rare-earth magnets are used to create two separate, small, but powerful magnetic gaps of opposite polarity along the voice-coil travel. Two coils are counterwound on the voice-coil former so that each sits in its own gap, the system therefore operating in a symmetrical "push-pull" mode. This should be good for distortion, shows exceptionally good damping characteristics, and also provides a powerful self-limiting and nondestructive brake on overexcursion.

Meanwhile, in the ProAudio PA sector, JBL has just announced new DC3 drivers for its big HLA (horn-loaded array). These use a motor arrangement somewhat similar to Alpine's, with the emphasis on minimizing weight—a high-lying PA rig can use 14" drivers that weigh only a few pounds.

**UNITED STATES**

**Barry Willis**

On the HDTV front, more is better. That was the position taken by ABC Television and Baltimore-based Sinclair Broadcast Group Inc. at a mid-August digital-television conference held in New York. The two corporations independently announced that they would use their allotted digital broadcasting spectrum for multiple channels rather than as single channels for ultra-high-quality programming. "In an expanding multi-channel marketplace," said ABC's president Preston Padden, "our share of viewing will continue to erode as long as we remain a single channel..." Other networks—CBS, NBC, and Fox Broadcasting—were adhering to their will-definitely-be-there-with-HDTV policy at the time of the conference. Whether they will follow ABC down the less-than-high-D path is still an open question.

Citing the probable fact that the real winners in the HDTV race will be manufacturers of (and dealers for) the new Digital TV sets—which are expected to debut for between $3000 and $5000 each—Sinclair's president David Smith stated pointblank that no one has come up with a formula that enables a single-channel HDTV broadcaster to take home a bigger paycheck than his low-rez counterpart. The opposite is likely to be the case: "We've yet to conclude where anybody makes any more money on a day-to-day basis as an HDTV broadcaster," he said. HDTV startup costs can run into the several million per station, without the guarantee of increased viewership or advertising revenue.

**HDTV startup costs can run into the several million per station, without the guarantee of increased viewership or advertising revenue.**

The free lunch given broadcasters by the Federal Communications Commission last year in the form of no-charge digital licenses is "a once-in-a-lifetime opportunity to reinvent ourselves," said Padden. His company hopes to siphon off some of the $30 billion in annual subscription fees now paid to cable and satellite services. Mr. Padden also made some-by-now predictable comments about moving into the Internet and interactive TV. Brings to mind President Jimmy Carter's most memorable and probably most regretted quote: "We must lower our expectations."

Although network affiliates in the nation's 10 largest markets are under an FCC mandate to begin transmitting digitally by the end of next year, broadcasters elsewhere have been given a reprieve from the 2006 deadline. That reprieve may actually prevent some accidents and save some lives. Sound a bit alarmist? Little noticed amid the hoopla and hot air surrounding the HDTV issue is the fact that every one of the 1600 broadcasters in the US is going to have to mount new antennas somewhere. In case you hadn't noticed, existing towers and the tops of tall buildings are already loaded to capacity with antenna arrays for radio, TV, personal communication services, microwave transmission, and uplink services.

There is a desperate need for the construction of new transmission towers, but the fact is that, nationwide, there are only three companies with a total of six crews skilled in erecting high towers, who in total put up an average of 10 to 15 towers a year. On May 4, Joel Brinkley of the New York Times (and now also of Stereophile Guide to Home Theater) published a stunningly well-researched and sobering piece on the difficulties and dangers of the stepped-up pace in tower construction. A survey by the National Association of Broadcasters showed that up to 700 new towers will need to be built to bring all its members in line with the FCC's requirements.

The process won't be an easy one. In addition to the physical danger, there are serious bureaucratic hurdles to clear. Unlike television's heyday of the 1950s and early '60s, when towers could be put up almost anywhere without opposition, now builders must run the gauntlet with organizations ranging from the Federal Aviation Administration to Ducks Unlimited, and must meet increasingly stringent zoning and insurance requirements. One such is a stipulation that a tower must be surrounded by unoccupied land in all directions in case it falls, as did several in Minnesota and North Dakota during a storm last April. A 2000' tower must therefore sit in the center of a 4000'-diameter free zone—a tough spec to meet in crowded metropolis areas. There are also widespread, if unproved, environmental and health issues directed at broadcasters.

But safety is the number one problem. John Miller, president of tower-builder LeBlanc Communications Inc., told Brinkley that although there are perhaps 400 tower construction crews in the US, all but a few of them specialize in short towers—a couple of hundred feet tall—all of the type used for cellular telephone service. "There's a world of difference between that and putting up tall towers," he said.

Depending on the terrain and the size of the area to be served, television towers can range up to a legal maximum of 2049—half a mile high—at a minimum cost of $1000/ft. Miller justifiably fears a rush to move short-tower crews into tall-tower construction without the necessary years of training. Last year, three workers died in a tower construction accident in Dallas. Two of them had previous experience only on cell-phone towers.

**UNITED KINGDOM**

**Paul Messenger**

For me, the high point of the Bristol UK Show (Stereophile, May 1997) was the debut of Max Townshend's Seismic Sink Stand, a good-looking but weirdly metastable device that takes environmental isolation a stage or three further than anything else I've encountered.

As much of my recent hi-fi progress has been bound up in changes to support
Sonic Frontiers Phono 1 phono stage embodies the newest features of our technical design staff. With 62 dB of gain - for all currently available phono cartridges, and an extremely low noise level, the Phono 1 is usable in systems up to extremely low overall sensitivity.

Features:

Sonic Frontiers Phono 1...

Details & Features:

- Four (4) 6922 dual triodes in a non-inverting hybrid circuit configuration, utilizing discrete low noise J-Fets.
- Selectable loading of phono cartridges (resistance capacitance) via DIP switches on the rear panel.
- A mute function, allowing the user to "cut out" the preamp, making the system analog and eliminating the need for a front stage preamplifier, the Line 3.
- A preamp chassis damping material, applied to the chassis and the top cover.
- 2.8 oz. FR4 printed circuit boards utilizing SMOBC and ISO-MASK construction.

These design details culminate to present the Phono 1 with a complete musical picture - precise instrument tracking, holographic soundstaging and pinpoint imaging. The Phono 1 ensures that even the most subtle musical details are heard with astonishing clarity.

Phono 1 phono stage embodies all of the Sonic Frontiers design strengths. Innovative, high performance circuitry, innovative design execution, lasting value and impeccable quality.

Track-Record

Pre 1P The Phono Stage

unsurpassed information retrieval from vinyl at an affordable price

The PRE 1P is an all tube MM/MC phono stage designed to satisfy the most critical vinyl enthusiast. Utilizing innovative circuitry, careful parts selection and uncompromising craftsmanship the vinyl enthusiast can hear all the music locked in those grooves. The PRE 1P realizes tight accurate bass, lighting fast transients, high frequency detail and extension, all attributes normally ascribed to solid state, without the hard edge for which transistor products are sometimes known. The all tube PRE 1P preserves natural sound staging, depth and imaging with the harmonic integrity of the musical performance as only vacuum tubes can.

Design Features:

- All Tube Design - four (4) dual triode tubes (two 6922/ED86CC; two 12AT7/EC861) vacuum tubes
- Gain - 48 dB
- Advanced Power Supply - separate shunt regulators for each channel, a precision voltage reference and a high current series pass regulator for the vacuum tube filament supplies.
- Exceptional Parts Quality - Mullard, Rel-Cap, Roderstein, IRC and Holco resistors; and Kimber Kable hook-up wire.
- PCB Layout - careful track layout, parts placement and grounding techniques combines with low loss FR4 material, integrating both SMOBC and ISO-MASK construction.
- MC & MM Phono Capability - 0.004mV cartridges or greater.
My oil-rig crossbreed of Mana and Townshend supports is giving enormously entertaining results.

UNITED STATES
Barry Willis
A study conducted by the University of Southern California indicates that workers with long-term exposure to electromagnetic radiation may be prime candidates for Alzheimer’s disease. Especially at risk are those who work close to electric motors, such as seamstresses, or those who use electrically powered tools, such as carpenters and machinists.

USC investigators compared the work histories of 326 Alzheimer’s patients over the age of 65 to those of 152 non-Alzheimer’s patients at the Rancho Los Amigos Medical Center in Downey. They found that male Alzheimer’s victims were 4.9 times more likely to have had high occupational exposure to strong EMR fields than were nonvictims. Female Alzheimer’s victims were 3.4 times more likely. Seamstresses are extremely overrepresented among all Alzheimer’s cases, according to Dr. Eugene Sobel, primary author of the study. “Their exposure is the highest for all occupations,” he said.

Dr. Sobel emphasized that occupational exposure is much greater than residents would encounter living near high-voltage power lines. A report released by the National Academy of Sciences in October ’96 helped quell a widespread fear that EMR from power lines was responsible for childhood leukemia and other cancers. Several studies failed to establish a conclusive statistical link between the diseases and electromagnetic radiation.

Some researchers were skeptical about the implications of the USC study as well. Dr. Neil Buckholz, director of Alzheimer’s research at the National Institute on Aging, which sponsored the study, said “The results are too preliminary... it needs to be reproduced by some other group before we can have any confidence in it.”

The study’s findings were backed up by at least one other reputable institution, however. In September the Centers for Disease Control and Prevention released a report indicating that workers exposed to strong electromagnetic fields are more prone to certain neurological disorders. If sewing-machine operators are at greatest risk, as Dr. Sobel states, the implication is that working long hours with one’s head in close proximity to strong EMR fields disrupts normal brain functions. No mention was made as to the risks associated with occupations in the electronics industry, but assemblers, technicians, and engineers might be well advised to investigate the benefits of EMR shielding. Computer monitors now come from the factory extremely well shielded because of several health problems attributed to them in the 1980s. USC’s research was reported in the December 18, ’96 edition of the journal Neurology.

ERRATA
Unfortunately, seven classified advertisers were mistakenly omitted from October’s “AudioMart” section. Stereophile would like to apologize to Peter Apple, Lionel Ballin, Richard Minick, Ta-Chen Wu, Paul Wakeen of Media Access, Guy Hannel of Placete Audio, and Bruce Cholka of DC Sound.

In October, we mistakenly confused a picture of a pair of Joseph Audio RM50 loudspeakers in Jonathan Scull’s listening room as Joseph RM22i speakers at HFI ’97 (p.83) and we mislabeled a photograph of Balanced Audio Technology’s new VK-D5 CD player as being of the VK-P10 phono stage (p.73). Finally, the photographs of the audiophiles shepherded around the Show by Rick Rosen and Lonnie Brownell were also mislabeled. Our apologies to the exhibitors and to Michael Rand and Gretchen Benedix (p.75), Peter and Kristina Tong (p.73), John and Anne Schneider (p.81), Ray and Pat Tarp, Ted Robidoux and Marie-Pierre Dagenais (pp.70-71 and p.85), and Geoff and Dianna Rog (not pictured).
While it may be prudent to prepare for an afterlife of entertainment, let's take a few moments to discuss the here and now. As you already know, great home theater sound has little to do with "booming" sound. Don't get us wrong, we enjoy the impact of an exploding alien head as much as the next guy. But exceptional home theater is also about recreating the subtle everyday sounds that convince the ear that you're part of the action. This illusion is only possible with the finest components such as our new amplifiers: the 5-channel HCA-1205A and the 3-channel HCA-1203A. Besides being THX-certified, both could be considered showcases of high end technology. For the whole story, visit our website or your Parasound dealer. And hear products that will provide a lifetime of entertainment. And then some.
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Thinks the higher the quality the better
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Thinks the higher the price the better
Automatically believes when told the more expensive one is better
Aragon's Palladium Class A monoblock amplifiers
$15,000 per pair

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Aragon’s Palladium, the finest in amplification, is available in North America exclusively at
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Jadis and Creek.

How could two product lines be less alike?

Creek. The name is Dickensian, even if Mike Creek himself is not. He's your basic down-to-earth, meat-and-potatoes, fish-and-chips, pub-loving British gent. While there's nothing scruffy about him, there's nothing fancy, either. Does Mike Creek own a suit? (For that matter, do I own a suit... that fits?) Mike does not dress like Jean-Paul Caffi, Monsieur Jadis.

Nor does he charge Jadis prices.

Knowing Mike and Roy Hall, his US importer and business partner, I get the feeling these chaps really like their 'umble British eye-fye. Come to think of it, the last time I saw Roy Hall in a suit was at his son's Bar Mitzvah. (I remember because I had bought a new suit for the occasion.)

Jadis, on the other hand, is flamboyantly French. "The best-sounding amplifiers," the Jadis slogan reads.

M. Caffi shows some modesty, though. At least he doesn't say "best in the world," as one US high-end manufacturer does in a new ad campaign.

Listening to the Jadis JA 200 and the Jadis SE 300B, I would agree that these are among the best-sounding amplifiers. I'm kicking myself now for selling my SE 300Bs before the new Western Electric 300B tubes became available from Westrex: these tubes're faboulos!

But how about the new entry-level Jadis Orchestra integrated amp? Is this among the best-sounding? Is it un vrai Jadis?

That's what I wanted to find out.

Actually, Jadis products, while expensive, offer value for money. With each Jadis product, what you get correlates with what you pay. That's true even of the JA 200 amplifiers, erstwhile favorites chez Scull, which retail for $25,995/pair.

Furthermore, Jadis rarely discontinues a model. The JA 200, JA-80, and JA-30 mono amplifiers, with which Jadis first made its reputation, are still in production. So is the DeFY 7, introduced about a decade ago.

The adverb Jadis (the s is pronounced) is not quite translatable into English. It means "formerly," or "in times past." The word suggests warmly recalled memories of long ago — à la recherche du temps perdu. There's something Proustian about the word... and, indeed, about the sound of Jadis products.

Not that Jadis amplifiers sound the way that hi-fi sounded long ago — there was no hi-fi long ago. Jadis amplifiers sound the way hi-fi should have sounded long ago: romantic, rich, full-bodied, full of warmth and bloom.

Jadis Orchestra integrated amplifier

The new Orchestra, at $2995, is not Jadis' first foray into integrated territory. There are two other integrateds chez Jadis: the DA-30, rated at 30Wpc, and the DA-60, rated at 60Wpc, which retails in the US for $8018 in its basic version. The DA-30 is not available in the US because Jadis importer Frank Garbie, of Northstar Leading The Way, doesn't think he could find a way to sell it at around $6000. Too bad — the DA-30 has an almost legendary reputation in France. I hear that the amp subjectively sounds more powerful than its 30Wpc rating implies.

Unfortunately, many audiophiles can't afford even the DA-30.

In the June/July issue of Haute Fidélité, Pierre Yves-Maton calls forth images of French mélomanes with their tongues hanging out, drooling over the DA-30 — l'objet de leur rêve. In France, even with 20.5% VAT, the Jadis Orchestra comes in at 9800 francs — about half the price of the DA-30. "Un prix franchement démocratique!" cries M. Maton. An openly democratic price.

Let's not forget the economics of importation. In France, the Jadis Orchestra sells for about half the price of a Conrad-Johnson MV55. There, the import penalty works in Jadis' favor against US competition.

As the Haute Fidélité article reveals, M. Caffi orchestrated this amp not so much with democracy but with communism in mind — and, as a good French capitalist, how to profit from it.

Jadis is big in Asia — or, more accurately, Asia is big for Jadis. The biggest market by far in Asia is mainland China, but the good contrades in Shanghai and Peking don't quite have the purchasing power of their Hong Kong cousins. Hence the need for a more, um, proletarian product.

But producing a proletarian product and making money from it works only when you sell a fair number of them. (This is the philosophy behind the Rega RB 300 tonearm, for instance.) The more markets, the merrier. So the Jadis Orchestra will be available worldwide.

The Orchestra happens to pair perfectly with the Cabasse Farella 400 speakers, which Frank Garbie also imports. I listened mainly with this combination, using a Micromega Stage 6 CD player as my main source to keep the system totally French (except for cables).

So... is the Orchestra un vrai Jadis?

Mais oui! To start with, the amplifier is manufactured in the same facility as
A heated argument for cooler sound.

Digital Sigma-Delta Modulation

Conventional subwoofers convert as little as 10% of their input energy into sound. The rest becomes heat. But, Energy ES-series subwoofers, featuring our proprietary Digital Sigma-Delta Modulation MOSFET amplifiers, convert virtually all of the input energy into sound. Not heat. For more power and maximum SPL... Cool!

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The result is earth shaking Musical Truth™. Bass you can believe in. No matter where you are, you're there.

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ES-18XL, 400W
18" Subwoofer
other Jadis products. The transformers are all wound by Jadis from LF oxygen-free copper. As with all tube amps, the quality of the transformer is very important for the overall sound. Almost as important, perhaps, the amplifier is entirely hard-wired; there are no circuit boards. The parts quality is high—as seen by such touches as ceramic tube sockets.

The Orchestra is called an integrated amplifier, but the line-stage is passive, which is to say there isn’t one. No on-board phono option is given, but hell, there’s no shortage of outboard phono stages these days. There is no remote capability.

Fine jewelry: The more expensive Jadis separates are finished like fine jewelry, with stainless-steel chassis, gold-plated nameplates, and gold-plated plaques atop the transformers. Here, the chassis is stainless steel, but the gold-plated plaques are gone. The nameplate on the front is matte-finish gold-toned metal. The side panels are wood. Attractive but not stunning.

One thing you’ll have to decide, if you buy the Orchestra, is where to put it. The 21” width is nonstandard. (The depth is 10.”) This is a tubed unit, so you’ll want to give it good ventilation. Do you have enough space on your table top? The amp may be too wide for the top shelf of your equipment rack.

You can make the Orchestra look ugly by installing the black tube cage so that the amp complies with CE regulations. But in every photograph of the amp I’ve seen, the tubes are shown en plein air. Hey—if you’ve got tubes, flaunt ‘em!

The output tubes are EL34s from Yugoslavia (Serbia). The tubes do sound uncommonly…ah, um, clean. They also have a vaguely Balkan look about them, especially with their nipples on top. There are two ECC83 (12AX7) input tubes, one per side, and possibly of Yugoslavian origin. The amp is rated at 40Wpc—speaker impedance not specified. Presumably that’s 40Wpc into 8 or 4 ohms.

One more thing about the tubes: You can’t easily re-bias the EL34s yourself. For that, you have to remove the bottom plate and do the job with a multimeter while the unit is powered. Merde! Highly dangerous—fatal, perhaps, if you don’t know what you’re doing. Needless to say, the instruction manual recommends that you have this done by your dealer’s tech. Good advice. Why doesn’t Jadis offer user-trimmable bias pots up on top?

Mr. Garbie assures me that the bias is internally adjustable in the interest of better sound. Or perhaps it’s done to discourage owners from tube twiddling—you know, using crappy tubes, then asking Jadis for warranty service when the tubes take down the amp.

Obviously, there’s enough gain from the power amp’s driver stage—I didn’t feel a need for more gain. As with the Creek 4330R below, circuit simplicity contributes to good sound.

You have five line-level inputs, a volume pot, a balance control, an on/off switch—cest tout. No tape loop. There’s only one set of speaker outputs, so biwiring will have to double up. The power cord on my unit was captive.

Yes, the Orchestra is a true Jadis, all right.

You can hear that right from the moment of turn-on—especially in terms of dynamics, bass extension, and harmonic richness. The Orchestra produces a big, full-bodied sound with lots of bloom. The midrange and treble are admirably clear. As for the bass, there’s plenty of it—very powerful, very rich through the Cabasse Farella 400s, which have a tendency toward leaness, especially with smaller solid-state integrated amplifiers.

Overall, I was quite pleased with the sound of the Orchestra. But I could have wished for the bass to be tighter. On some recordings—Diana Krall’s All For You, for instance (Impulse! IMPD-182) —I thought the bass was a bit bloated. True, the recording itself is a bit bloated.

I didn’t feel that this amplifier offers the last word in low-level resolution. This is where the Orchestra is not quite the equal of the more expensive Jadis products I’ve heard and, indeed, owned. I could have wished for a somewhat more transparent, open, and airy sound.

I tried the Cabasse speaker cable—free when you buy the speaker. Not bad, but I got better results with TARA RSC Prime and Synergistic Research Mk.II S. Love that Synergistic Research cable!

But with whatever cable I used, I heard better low-level resolution from the new Creek 4330R. I didn’t hear the same harmonic richness or dynamic drive, however. The Orchestra, after all, is a Jadis and the Creek is not. But the fact that the Creek outshone the Jadis in any area is pretty amazing.

I realize that Jadis can’t afford to give away the store at an entry-level price. Who would buy the DA-30 if the Orchestra were damned near as good for half the price?

The problem I have is what happens to the Orchestra’s price after the import penalty. The really expensive Jadis pieces cost so much the price almost doesn’t matter. At lower price points, there’s a heck of a lot more competition.

LFD Audio Mistral integrated amplifier

Shortly after the Orchestra arrived, I read an article in Haute Fidélité about LFD Audio’s Mistral solid-state integrated amplifier, designed by Professor Malcolm Omar Hawksford and Dr. Richard Beaus. The French had flipped—the review was such a rave that I immediately called England to find out if LFD had a US importer.

At the moment they don’t, although I expect that to have changed by the time you read this. Meanwhile, Richard Beaus sent me the amp anyway. To make a long story short, the LFD Mistral, not the Jadis Orchestra, is now playing as the reference amplifier in my living room.

The LFD Mistral’s airiness and openness remind me of the $13,000/pair Jadis SE-300B. Compared with the Mistral, the Jadis Orchestra is more dynamic, and produces a more dramatic, more full-bodied sound. The Orchestra has a way of making most other integrateds sound wimpy. While British amps play tunes—especially small-scale tunes—the Jadis Orchestra plays symphonies. The amp conveys something of the power and sweep of a full orchestra—this integrated is aptly named.

But, having said that, the LFD Mistral breathes more life and light into the music. And once you hear that, well…it’s hard to go back and listen to something else.

In a way, the Jadis Orchestra reminds me of a good bottle of affordable wine from one of the world’s great vintners:
The world's most remarkable cables start at $120*

---

RSC-CD $120/m pair
RSC Prime $149/m pair

RSC Prime 500 Speaker Cable
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™ Rectangular Solid Core, Master, Decade, The One and RSC are trademarks of TARA Labs, Inc.
you can taste a good deal of what's in the more expensive bottles. My main problem, I suppose, is with what the wine merchant has to charge once the bottle makes its way here from France.

Creek 4330R integrated amplifier

No, the Creek 4330R integrated amp is not the equal of the Jadis Orchestra or the LFD1 Mistral. Sorry, but it just doesn't have the dynamic sweep of the Orchestra, or the light and life of the LFD1. But the Creek is quite remarkable in its own right, and does have a number of things going for it.

Like price.

You can even cheap out, although I don't advise it. For $499 you can get the basic 4330R, sans remote. Be advised, though, that you can't change your mind and add a remote later. Go for the remote version for $599.

And unlike the LFD1 Mistral, you can actually buy the Creek 4330R. It's import ed by Music Hall. If the LFD1 Mistral becomes available in the US, it will likely retail for at least $1000, possibly more. And it doesn't have a remote.

The Creek lets you cheaply add a phono stage: $60 for a plug-in moving-magnet board, $95 for moving-coil. (Neither was available for this review.)

There's an optional gain board for an additional $60. As supplied, the line stage is passive. Creek has been able to up the sensitivity of the amplifier's driver stage, allowing most users to use the amp without an active line-stage.

Rule #1 in hi-fi: Simpler is better.

This is about as basic an amp as you can get—real British fish'n'chips, meat'n'potatoes. Quintessentially Creek. Totally free of bullshit. No one will be claiming that this is the best amplifier in the world. What it may be is the best-sounding amplifier you can buy for under $1000.

The 4430R is what Roy Hall, in his rapidly fading Glasgow accent, might call "wee hi-fi," and I sometimes dismissively call itty-bitty British eyef. Only this time I'm not dismissing. The chassis measures +16" wide by just 8" deep and +2" high, including feet. The power is rated at 40W into 8 ohms (both channels), and 65W into 4 ohms (one channel). The 4330R is said to be able to control difficult speaker loads. There are three line-level inputs (four if you forego phono) and a tape loop. No balance control. No headphone jack—Creek wants you to buy their OBH-11 headphone amp. There's one pair of speaker binding posts—bi-wiring will have to double up. But these are proper binding posts—almost; not the plug-in sockets found on the Creek 4240.

There is a preamp out if you want to add the Creek A43 standalone amplifier (50Wpc), which should be available by the time you read this. You can use the 4330R to drive your speakers' tweeters and the A43 to power the woofers. Assuming your speakers allow for bi-wiring/bi-ampping, of course.

All right, perhaps you're not in the market for a 40Wpc British integrated amp for your main system—a little black Brit box is not the thing to excite most US audiophiles. But how about for a second system, in the family room, office, or vacation home? Or a trouble-free solid-state amp you can safely recommend to family members and non- audiophile friends?

So why do I get it up over the Creek 4330R?

In one word, resolution.

The resolution of low-level detail, from an amp this size at this price, is amazing. The amount of low-level detail is almost staggering—not far short of the very best I've heard at any price, and beating out, in my opinion, such amps as the Musical Fidelity A-2, the AudioLab 1000S, and the Bryston B-60.

What else do you get besides this low-level resolution?

You get very good spatial reproduction—which, I find, invariably goes along with low-level resolution. Plus you get a very fine harmonic presentation, especially considering that this is budget solid-state. No, the bass and midrange are not as full-bodied as I might like, but the sound is very smooth, very sweet, and the treble is nicely extended without ever sounding peaky. All of this was brought out by the easy-to-drive but highly revealing Cabasse Farella 400 speakers.

As you might expect, too, from a British amp, this thing can play tunes. The Creek 4330R lets go of the notes. There is an excellent sense of rhythm and pace. The amp sounds fast, clean, clear, and open. In many respects—indeed, in almost all the important respects—the Creek 4330R is almost as good as it gets at any price with solid-state. For $600.

So... drawbacks?

This is still a small amp. The harmonic presentation could be richer, fuller. There could be more dynamic drive. Bass could sound more powerful. There are not the almost ethereal light and life that there are with the LFD1 Mistral. But hell, you expect some limitations with a small integrated amplifier. I found nothing whatever that got in the way of my musical enjoyment. And for $600, that's saying a lot.

An interesting comparison would be the Musical Fidelity A-2, available from Audio Advisor for $695 (maybe less if there's a sale going on). The Musical Fidelity unit does have a richer, fuller harmonic presentation—there's more body. And the A-2 comes with a moving-magnet phono stage as standard. But the A-2 lacks a remote. And a remote is handy. Me? I'd take the Creek. The A-2 sounds just too opaque by comparison.

As for the Bryston B-60, it's more powerful, the build quality looks better, and there's a 20-year guarantee. As for the AudioLab 1000S, there's outstanding configuration flexibility, which makes the amp especially suited for home-theater applications. Still, like I said, I think the Creek beats them out with low-level resolution.

Any complaints?

Well, yes. (We can't let Roy Hall off so easily, can we?) The volume control on the remote works well enough but has a tendency to overshoot. You sometimes need to turn back a tad to set the volume where you want it. While the remote does what you want—adjusts volume, mutes the sounds—it's a somewhat cheezy affair.

You can mute the amp only from the remote. Better not lose that remote or you'll be up the creek. (Heh-heh.)

To find out what was going on with this masterpiece of Creekery, I called England. Mike Creek was off on holiday—I think he was holed up with Roy Hall and his family at a villa in southern France—so I talked with the amp's co-designer, Alex Nikitin.

"Privyet, Alex. Nu shto, what makes the amp sound so good? Any Russian tricks up your sleeve?" I laughed my evil
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laugh. (*Ivan the Terrible must have had a laugh like that,* says Marina.)

As it turns out, getting circuitry out of the signal path is a good deal of what the 4330R is about. Look inside the 4330R—there’s hardly anything there. Look inside the LFD Mistral—same thing. The more parts there are and the more complex the circuitry, the more screwed up the sound will be.

Alex says they replaced the 4240’s current-limiting circuitry with one that’s “more benign.” As in “less cancerous”?

“We found that the output-stage protection circuitry was affecting the sound quality of the 4240. We used current-limiting resistors. For the 4330R, we found a way to eliminate these current-limiting resistors. The 4330R can deliver a huge amount of peak current—up to 19 or 20 amps RMS. That’s an enormous figure for a small amp.

“We improved the driver circuit, too—made it much quicker. The slew rate is at least 50% higher than it was with the 4240. As a result, we’ve been able to reduce the idle current. That’s why the 4330R runs cooler than the 4240.

“As we discovered, reducing the idle current improves the sound because the power supply works less than before. The result is a more dynamic sound.

“We were able to increase the sensitivity of the driver stage, too. This allows us to make the line-stage passive, offering a gain stage as a plug-in option. The gain is available if you need it, but the amp sounds better without. Basically, we eliminated an op-amp from the circuit, which was masking the sound.”

Alex seemed quite proud of himself, as well he might be.

“For the power supply, we use multiple high-quality capacitors in parallel—six of them—which produces better sound than a single pair of electrolytic capacitors of large value,” Alex continued. “These multiple capacitors store 20,000 microfarads. The multiple arrangement reduces power-supply impedance and unwanted inductance.”

It also results in fast recovery. I’ve found that many designs seem to be slowed—weighed down, as it were—by their massive power supplies.

Creek is not the only one to use small capacitors in parallel. LFD does too, on the Mistral that I’m just itching to review fully. So does McCormack in its DNA series of power amplifiers.

The 4330R sounds pretty good after an hour’s warmup, and better still if left powered all the time. Since the amp doesn’t run hot and power consumption at idle is 40W, this should pose no hard-

ship. There are ventilation slots over the interior heatsink, and the top of the chassis can run slightly warm to the touch—be sure to give the amp some ventilation. (I turn off the amp when I leave the house for more than an errand in summertime; and, of course, I turn it off during thunderstorms or when I leave for a long weekend or vacation.)

This is a big advantage over the class-A Musical Fidelity A2, which draws much more electricity and runs much hotter. Leave the Creek on and it will always be warmed up.

What speakers? I used the Creek 4330R mainly with the Cabasse Farella 400 speakers—no problem there. Surprisingly, I was able to get reasonably good results with Marina’s Martin-Logan Acius i—not your easiest load. Yes, I ran out of power at higher volume levels with large-scale orchestral pieces, but I’m not one for head-banging anyway. The Creek 4330R on top and the Creek A43 power amp on the bottom would probably be perfect on the Logans.

Performance for the price: that’s what makes the Creek such a breakthrough product. I can say the same thing about the LFD Mistral—in many ways, a similarly conceived design. I love the Creek 4330R. It’s a purist, minimalist amplifier using the simplest possible circuits. I suspect that it’s the kind of product that can come only from a company small enough to be able to take the time to carefully monitor parts quality and optimize the sound of each amp. If you want to know why amplifiers from big companies often sound like crap, that’s it: they’re mass-produced. The first person to listen to the amp is probably you.

How good is the Creek 4330R?

Devastatingly good. Its only real limitation is that it’s still a small amp—bally and dynamic-sounding for such an amp, but still small. What makes it devastating is that many far more expensive solid-state amplifiers don’t sound anywhere near as clear, clean, open, and expressive. I hate to talk like a Britcrit—tap your feet, play tunes, all that tommyrot—but this damned thing is fun to listen to. You can tap your feet. I do it every night listening to the Emerson’s cycle of the Beethoven String Quartets. (Only kidding.)

As for speakers, give this some thought:

Why bother with expensive, inefficient, difficult-to-drive speakers when you’ll have to drive them with an amp that doesn’t sound half as good as the Creek 4330R but costs 10 times as much? You might want to get yourself a good pair of British or French speakers—the Ruark Sceptre would be an excellent choice if you’re into jazz and classical, the Epos ES12 if you gravitate more to jazz and pop—and just drop out of the high-end game. Enjoy your stereo. Read Stereophile backwards—music section first!

The Creek 4330R is exactly what we need in budget hi-fi: sound quality so good that you may feel no need to mess around with more expensive stuff. Funny that it was half-designed by a Russian. (I’m really laughing like Ivan the Terrible now.) The amplifier is downright subversive.

Micromega Stage 6

Micromega has changed distributors. The estimable French brand is now distributed in the US by Magnum Dynalab, the FM tuner and antenna people.

Wes Phillips reviewed the Micromega Stage 2 CD player in October 1995, and I auditioned it in March 1997. The Micromega series now consists of the Stages 4, 5, and 6, at $995, $1195, and $1595, respectively. Updates are possible by changing the CPU and DAC boards. The price for upgrading from a Stage 2 to a top-of-the-line Stage 6 is $550. (Actually, the Stage 5 replaces the old Stage 2, but upgrading from a Stage 2 to a Stage 5 would be a virtual lateral move that probably wouldn’t

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**Jadis,** Chemin du Pech, 11800 Ville-dubert, France. Tel: (33) 4 68 78 75 06. Fax: (33) 4 68 78 96 43. Importer: Northstar Leading The Way, P.O. Box 3763, Durango, CO 81302. Tel: (970) 259-6722. Fax: (970) 259-6727.

**LFD Audio,** 7 Lancaster Gardens West, Clacton-on-Sea, Essex CO15 6QG, UK. Tel: (44) 1255-422533. Fax: (44) 1255-221069. No US distributor.

**Micromega,** 1 Rue Léonardo da Vinci, Z.a. des Boutries, 78704 Conflans Ste Hne, France. Tel: (33) 3490-2502. Fax: (33) 3919-8323. US distributor: Magnum Dynalab, 575 Kennedy Road, Cheektowaga, NY 14227. Tel: (800) 551-4130. Fax: (905) 791-5583.

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make much sense.)

So, should you make the switch? The Stage 6 is a significant but subtle improvement over the Stage 2. There's noticeably more resolution. Dynamics are subtly improved. Bass extension, too, is better. But are the improvements worth $550? That's a tough call. Overall, I'd say yes. But if you don't want to spend the money, don't feel bad about sticking with the Stage 2.

The Stage 6 preserves all of the Stage 2's stellar qualities: the tubelike timbres, the overall smoothness, the excellent low-level resolution. This is a player to buy and forget, knowing that, yes, you can do better for a lot more money— with Micromega separates, for instance. But so what? This player is so listenable that any minor shortcomings—not quite the ultimate resolution, lack of halls-to-the-wall bass and dynamics—are easily overlooked.

For classical-music listeners especially, I strongly recommend a trip to a Micromega dealer—this is my reference player in the living room. (On the other hand, the Rotel RCD-990 is my reference player in the listening room, which may tell you something—its sound is a little more resolving and definitely more dynamic.) There's nothing like a little loo-fay François to civilize one's system. Or a lot of loo-fay François, for that matter.

If you can audition all three current players in the Micromega line—the Stages 4, 5, and 6—so much the better. You can make up your own mind based on your budget and what you hear. Presumably, the Stage 5 is very close in overall sound quality to the old Stage 2, and the lower-priced Stage 4 possesses some of the same sonic virtues. (A dealer friend suggests that the $1195 Stage 5 is actually the best buy.)

Why are the Micromega players so special? For the same reason that so many other French-made products are so special: the harmonic presentation. For me, the Micromega units just get the sound of instruments and voices right—there's no hardness or thinness. A person can enjoy the beauty of the sound—the magic of the moment, if you will—not just the information retrieved. The Micromega sound is absolutely the opposite of sterile, clinical, dry, etc.

1 Micromega and their current distributor, Magnum Dynahar, are to be congratulated for their upgrade policy. Essentially, you can upgrade from the Stage 2 to the Stage 6 for a few dollars more than the difference in retail price between the two products. You don't lose money.
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In the June "Analog Corner" I wrote that "Baby You're A Rich Man" on the US release of the Beatles' Magic Mystery Tour LP was originally issued in electronically reprocessed stereo because "Capitol back then didn't really give a shit." (MMT was first issued in the UK as a double 7" EP, Parlophone MMT/SMMT-1). Reader Preston Reese responded ("Letters," September '97 p.17) that while the original 1967 US LP release of MMT was a combination of stereo mixes and mono mixes re-channeled for stereo, the master of "Baby You're A Rich Man" was a processed stereo version "provided to [Capitol] by the Beatles and their producer George Martin in 1967...It wasn't until four years later, in October 1971, that 'Baby You're A Rich Man' got around to its first stereo mix, created for the German LP release of Magic Mystery Tour."

So, Reese maintains, it was not Capitol that didn't give a shit, but George Martin—who gave Capitol a piece of filtered garbage instead of a nice-sounding mono mix! Nevertheless his letter ends by lauding George Martin as well as mentioning that "Fremer seems unaware that there are many readers who could recite the precise date of each remix, the first and second engineers, and which cufflinks producer George Martin was wearing for each session."

I plead guilty to that last accusation: I do not know what cufflinks George Martin wore in the studio for each session.

Nor does Beatles engineer Geoff Emerick—I called him at home last week and asked him. I asked whether Martin would have sent Capitol electronically reprocessed mixes on which all of the lows in one channel were castrated and all of the highs were decapitated in the other. "No way!" he told me.

No one knows for sure, but we conjecture that, due to Capitol's insistence that MMT be a full-blown album (the EP was a nonexistent format in America), Martin sent Capitol stereo and mono mixes of the six MMT EP songs, which he already had on hand (the American LP came out in both mono and stereo), as well as stereo mixes of "Hello Goodbye" and "Strawberry Fields," which Capitol already had in mono for the singles releases, along with "Penny Lane," "Baby You're A Rich Man," and "All You Need is Love."

Martin did not have stereo mixes of "All You Need is Love" and "Baby You're A Rich Man," which were recorded at Olympic Studios, the former being part of a live TV broadcast with the Beatles singing over a prerecorded mono-mixed backing track; nor, for some reason, did he have a stereo version of "Penny Lane." So Capitol must have taken the mono versions they already had on hand and performed their electronic "magic."

**Good news from the RIAA**

On August 19, the Recording Industry Association of America (RIAA, www.riaa.com) released midyear software shipment figures (net after returns). The number of audio/video product shipped for the first half of 1997 showed a net drop of 9.7% compared to the '96 figures. Dollar value dipped from $5.5 billion to $5.2 billion.

Being in Washington, RIAA spin doctors were able to perform surgery on the numbers and crow about a 3.2% increase in full-length CD units shipped to retail. Overall shipments of CDs, though, dipped 73% "...as a result of the drop in special market shipments," which means record clubs and the like. Do you think record-company execs care where they sell their CDs? Do you think the 3.2% increase at retail makes up for the 73% decrease overall?

Meanwhile, vinyl "...enjoyed 16.7% growth in shipments and 273% growth in dollar value..." Yes, the vinyl dollar value is minuscule compared to CDs ($4 billion vs $18 million), but imagine what the number might be if record stores actually stocked records—as shocking a notion as that might seem.

And imagine what the numbers might be if all of the mail-order vinyl and independent store sales were included in actual numbers instead of in estimated form—which, I'm sure, grossly underestimates the vinyl percentage. I bet the number would be closer to $25 million.

So how does the RIAA explain the inexplicable surge in the "dead" vinyl format? "[It is] driven by demand for dance/techno recordings...and...some high profile artists continue to capitalize on the nostalgia for vinyl in their marketing strategies by releasing a limited vinyl pressing of their current releases."

Never mind the audiophile market. Never mind the alternative rock market, where "nostalgia" merchants like Sub Pop, Matador, Drag City, and others still issue new rock bands on vinyl. Never mind the truth. Just take what's staring you in the face—a 27% dollar-volume increase in an impossible-to-find format—and pawn it off as nostalgia and "marketing strategies." Yeeesssssh!!!!!
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All lined up—the Wallytractor

Two new cartridge-alignment tools arrived almost simultaneously, and both are reasonably priced and worthy of your attention. Wally Malewicz—a Polish-born mechanical engineer (a Bachelor’s in electromechanical engineering, a Master’s in mechanical engineering) who worked in the pre-Solidarity Gdansk shipyard and now resides in Minneapolis—contacted me in January to gently correct a few things I’d written and to tell me about his custom laser-cut alignment device.

Wally sent along some clearly drawn diagrams outlining basic tonearm geometry and demonstrating how his Wallytractor system works. His position is that a “one size fits all” protractor cannot be dead-on accurate, and that the most precise setup is achieved with a dedicated device. Malewicz’s alignment is based on the formulas developed by Baerwald in 1941, Bauer in 1945, and Seagrave in 1956/57. By knowing the arm design’s effective length (the distance from the pivot to the stylus tip) and subtracting the pivot-to-spindle distance, you can calculate the arm’s “overhang”: the distance beyond the spindle the stylus must travel to minimize tracking error.

Ideally, of course, you want to track a straight radius from the record’s outer edge to the lead-out groove. A pivoted arm describes an arc across the record; either the arm’s shape must be S-shaped to achieve minimum error from tangency (right angle to the groove), or, as is more common today, the headshell must be “offset” at an angle determined by the arm’s length.

Once Wally knows the particular geometry of your arm, he uses a laser-jig setup to etch a fine arc on a piece of reflective plastic. He also etches a set of three parallel lines at each of the two “zero” points along the curve—where the stylus actually intersects the true radius across the record—and drills a spindle hole.

To align your cartridge, you fit the jig over your spindle hole and rotate it until the pivot reference line points toward the pivot point. Exact aim isn’t important. Then you move the cartridge in the arm slots until the stylus fits in the outermost part of the etched arc (disengage antiskating, set tracking force correctly). If you’ve got it exactly right, which you won’t at first, the stylus will stay precisely in the etched groove from its outermost edge to the center. And at the two parallel line points along the arc the cantilever will “toe the line” directly over the center line. Getting it exactly right is somewhat time-consuming but not difficult, and once you’re done you have visual proof that your stylus is in the right place all the way across the record surface.

The final version of the Wallytractor will include two more reference points on the arc: negative and positive HTAE (horizontal tracking angle error)—the points on the curve where the stylus is at maximum distance from ideal on both sides of the arc.

Wally’s position is that a “one size fits all” protractor cannot be dead-on accurate, and that the most precise setup is achieved with a dedicated device.

Wally does his math assuming that record grooves are cut between 66mm and 146mm from the center spindle. Few records are cut as far in as 66mm (some Mercury’s come close, as does Jefferson Airplane’s “Bless Its Pointed Little Head”), though Wally did work out the math to show me what that arc would look like—and if you prefer the 60–146mm arc, he’ll cut it. As configured for between 60mm and 146mm, the zero-HTAE points are at 72mm and 124mm, with the negative point at 0.95° at 94mm and the positive one at 1.55° at 146mm.

A Wallytractor cut for your particular tonearm sells for $49.95—reasonable, in my book, especially when you consider that the price includes a specially selected magnifying glass to allow you to see the stylus in focus all across the arc. The Wallytractor is distributed by Pro Audio Ltd. (importer of Wilson-Benesch and Pink Triangle), 111 South Drive, Barrington, IL 60010. Tel: (847) 526-1660. Fax: (847) 526-1669.

I used a Wallytractor cut for the Graham tonearm to confirm the setup I’d done using Graham’s ingenious device. I’m happy to say it was “spot on.” Keep in mind, though, that some of Graham’s original jigs had plenty of play due to manufacturing tolerance problems; this compromised their accuracy. In any case, it’s comforting to be able to put the stylus down anywhere in the arm’s travel and know with certainty that it is in precise alignment. If your arm is not one of the more commonly available, Wally will make the jig if you can supply him with the arm’s effective length per the manufacturer’s specs, along with a few other measurements to ensure complete accuracy.

Malewicz tells me he’s also designed the Wallyskater, a device to set up and measure antiskating; and the Wally-VTA Tractor, which lets you adjust VTA to 20° “regardless of brand of tonearm,” though the device is cartridge-specific. Wally has also produced an 85-minute video dealing with tonearm geometry, azimuth adjustment, zenith adjustment, antiskating, VTA, etc. He’s working on editing and polishing it for future sale. We’ll report on these in the future.

Townshend Audio Elite alignment gauge

No sooner did I get Wally’s purely geometric solution to horizontal tracking than Townshend Audio sent me its patented Elite Alignment Gauge, which is based on some very different thinking. “Geometry is geometry”—I hear you—but Max Townshend has some other ideas. His gauge calculates distortion at any groove radius for any combination of offset and overhang—as opposed to just aligning for minimum tracking error.

What’s the difference? Townshend’s position is that minimizing tracking error in degrees results in gross end-of-distortion. What should be minimized instead, he contends, is the “ratio of tracking error to groove radius, which is proportional to distortion.”

Like Malewicz, Townshend believes a one- or two-point protractor can show you only a tiny error “of uncertain magnitude.” Townshend adds that distortion is directly proportional to tracking error and inversely proportional to groove speed, so the “faster” the groove speed, the lower the distortion. The Townshend device takes groove speed into account while also making use of the accepted geometric relationships between pivoted arms and groove radii.

Townshend’s calculations are based on a modulation of 5cm/s and, since “stylus profile has a bearing on the distortion level,” a 5 by 80 parabolic stylus shape. Townshend’s equation—upon which his gauge is based—is $D=44.4E/R$ where $D$ is distortion percentage, $E$ is tracking error in degrees, and $R$ is groove radius in millimeters. Unfortunately, 44.4 is not identified. (Don’t fall asleep on me now.)

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gauge consisting of a thick plastic card with a spindle hole drilled in it. The high-quality imprinting includes a millimeter scale on one edge, and a complex graph that looks something like a football field as viewed from the cheap seats (with “down and out” patterns marked), positioned to coincide with the record grooves.

The markings include a straight radius and a tangent line at 60mm (innermost groove) and every 10mm from there out to 140mm, plus one at 146mm — the lead-in groove. As you can see from the illustration, Townshend has inscribed the gauge with one example, an ideal stylus plot, that of (guess what?) his Excalibur arm along with percent distortion lines that flare out from the straight radius.

Confusing instructions: When installing a new cartridge, you’re told to begin by setting a coarse overhang, overhang being the distance between the spindle and the arm’s specified effective length as measured in a straight line from the pivot point directly over the spindle. Capeesh? But since many arms cannot move directly over the spindle, and because none can lower so that the stylus reaches platter height, and because the millimeter ruler on the Elite gauge is on the edge instead of being printed directly out from the spindle hole, and because the instructions give you the proper overhang only for a 220mm arm, commencing setup with this gauge can be very frustrating.

You must know both the length of your arm and the specified overhang or the effective length before you can begin. Even then, in most cases you’ll be able to set only a very coarse approximation — which wouldn’t be so bad if the rest of the process were not so time-consuming. What you’re asked to do is to get some graph paper and draw vertical (percentage error) and horizontal (tangent lines across record surface) axes. Not difficult, and actually fun!

Then you place the stylus down on the 60mm line, making sure the cartridge body and/or headshell edge is parallel to it. At that point the stylus will be either at the “zero” mark (directly on the straight radius — not likely), or it will be either “above” or “below” and on one of the percentage-distortion flare lines. You follow that line out to the number and mark it on the graph. Repeat the procedure for each of the nine remaining tangent lines, always making sure the cartridge body/headshell is parallel to the lines, until you have 10 plot points forming a distortion curve. It’s okay to move the gauge to keep the lines parallel — in fact, you have to.

Connect the dots, compare what you got to the various plots printed in the instruction booklet, and you’ll know where your alignment is at — overhang too far forward or too far back (or perhaps that the arm designer got the offset angle wrong). You make your adjustment in millimeters — which now, using the gauge’s ruler, you can do precisely — and start the procedure over again. If you’ve already got your cartridge aligned, you can use the gauge to measure the correctness of your setup, making (hopefully) small adjustments from there.

What your plot shows you is the percentage distortion at any point across the record surface. It also will show you just how subjective these measurements can be: You’ll find the plot points occasionally jumping up and down instead of following a smooth curve — an impossibility, of course, except that what’s parallel and what’s not is not so easy to judge, and a small shift can move the cantilever the equivalent of a country mile. You’ll have to go back and check your marks until you get a smooth arc.

Looking at Townshend’s best-case plot scribed into the gauge itself, it is apparent that he feels that the maximum distortion should be equal and at three points on the record: at the very beginning, where groove radii are largest and groove speed is fastest; at the very end at 60mm, to where few records are cut; and at the 80mm point. Not everyone agrees, but in the instruction booklet Townshend makes a good case.

Making the gauge somewhat difficult

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from the inventors of high end CD, the award winning 565 surround controller and Meridian Digital Theatre come digital pictures and sound, for the perfectionist
to use is the fact that the tangent lines are raised "embossings"—when you try putting the stylus on the line, it invariably falls to one side or the other. And if your headshell and/or cartridge doesn't have straight, parallel lines? In the instructions, Max Townshend says somewhat facetiously that, obviously, the designer did not intend for you to get a proper alignment. HAHAHAHA! Funny, Max.

I used both the Graham arm's flat-edged headshell and the cantilever to keep the lines parallel. Why Townshend doesn't have you use the cantilever itself as the main determinant of tangency to the straight radius is a mystery to me. Why rely on the cartridge body, which means you're relying on the manufacturer having installed the motor precisely in the body—not always a given?

When I confessed to a Townshend spokesperson that I found the instructions confusing, confounding, and written like a computer manual—or about as bad as instructions get—I was told that I was the only one they'd ever heard that from. So be it—maybe I'm a dummy. I also complained about Townshend's use of the instructions as an excuse to propagate about other subjects. For instance, at one point he says, "...the increasing demands of high-fidelity reproduction since 1877 have ironically made it much harder to construct a linear tracking arm that does not have drawbacks weakening its advantages." What these drawbacks or advantages are, he doesn't say.

The Townshend Elite Alignment Gauge is another useful tool in the war against tracking error.

In any case, at $35, the Townshend Elite Alignment Gauge is yet another useful tool in the war against tracking error, a fascinating device in its own right, and one I recommend despite all of my bitching. You'll need a good magnifying glass and a very steady hand.

And finally...

With Audio Alchemy's outstanding VAC-in-the-Box phono section currently unavailable, analog newcomers on a budget ought to consider Musical Fidelity's X-LP moving-magnet/moving-coil phono stage. While it doesn't offer AA's incredible gain and loading flexibility, the nicely constructed English unit does give you the standard 47k ohms in MM position and 100 ohms in MC, which in most cases is either ideal or close to it. MC gain is sufficient for all but the lowest-output cartridges, none of which will end up being used with a budget product like this anyway.

In my listening sessions I found the unit very quiet in both modes, and free of audible garbage like high-frequency crunchies and over-etchedness. Overall response was smooth and clean—though, like the inexpensive Creek unit I reviewed way back in August '95 (Vol.18 No.8) (also worth checking out), the usual budget-gear problems persisted: low-bass woziness; softened, somewhat out-of-focus highs; and a lack of overall transparency and clarity. That's compared to a $5000 preamp and an $8000 phono section, so what do you expect?

Taken on its own, the $295 X-LP (frequently on sale for $249.95 through Audio Advisor) will get you into quality budget analog in comfort. Matched with something like a Rega 3 and a good MM cartridge, you've got high-performance analog for about $1200. Then you'll be ready to hit the garage sales and get 400 great records for $400, as I did this past summer.
Now You Can Stop Kicking Yourself For Selling The Originals.

No audio equipment in history has achieved the legendary status of the Marantz vacuum-tube electronics. So timeless are the sonic and aesthetic attributes of this classic trio that, almost four decades after their introduction, pristine examples are still eagerly sought by committed music lovers and audiophiles alike.

Fortunately for those remorseful souls who parted company with their beloved originals, Marantz proudly announces the reintroduction of the Marantz Classics. The Model 7 preamplifier, Model 8B stereo and Model 9 monaural power amplifiers sound as remarkable today as when they first defined the state of the art during the Golden Age of Stereo.

These recreations are true to the originals in every way. In many instances, parts like transformers and meters have been sourced from the very suppliers who furnished them over a generation ago. Faceplates, knobs and switches are identical, and even the Marantz logo has been restored for absolute accuracy. All wiring is point to point; no circuit boards have been substituted for the sake of convenience or cost. Only genuine safety improvements, like detachable IEC power cords, standard fuses, and contemporary speaker terminals in place of archaic output taps, differentiate these modern units from their predecessors.

Ultimately, these jewel-like components could have you listening to music from a whole new perspective, while providing the kind of satisfaction that comes from possessing a timeless classic.

So instead of kicking yourself, you can sit back and enjoy the company of a long-lost friend.
George Reisch

I would love it if the world cared as much about the history of science as it does about Madonna, Bill Clinton, and baseball. But I know it's not to be.

"as inconceivably silly as Mingo discs do to many high-end detractors today." (Fi, March 1997, p.29). This is true — as Neil Young put it, if “this old world keeps spinning 'round, / it's a wonder tall trees ain't layin' down.” Since we just don't seem to be riding a spinning planet hurtling around the sun, most inhabitants of the 16th century thought Copernicus was just plain wrong. But it's not true that Copernicus stuck his neck out with this crazy theory because “the [old] geocentric model of the universe could no longer account for certain planetary positions.” Ptolemy's geocentric system, dating from about 150 A.D., was actually very precise and accurate. For well over a millennium, it worked just fine for all sorts of astronomical and (lest we forget) astrological purposes. Accuracy became an issue later, especially after telescopes became available and allowed observations to become much more precise. Copernicus was more worried about certain technical problems in the guts of Ptolemy’s planetary models: how the celestial spheres that carried the planets were supposed to rotate, how these spheres nested inside one another, and so on. He found that the best way to solve these problems was to put the sun at the center of the system.

Sometimes, however, these stories are much more misleading. The old chestnut about Christopher Columbus, for

1 Why do academics make the best babysitters? Because when it's time to put the kids to sleep, they know the most soporific story there is: “In chapter one of my dissertation, I examined...”
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instance, makes the entire human race look pretty stupid. We all learned in school that, in 1492, Columbus sailed from Portugal to find a western route to the Far East. The story goes that every- 
on at the time believed the Earth to be flat. To them, Columbus looked like a fool who was bound to sail off the edge. But, like a true hero, he bravely trusted his belief that the world is round, and the rest is history.

The story makes great copy, but it's flat-out false. Since the time of Archimedes, the number of serious, educated thinkers who've actually believed that the Earth is flat can be counted on the fingers of one hand. Generally speaking, no one did. Yet, as Jeffrey Burton Russell explains in *Inventing the Flat Earth* (Praeger, 1991), the rise of Darwinism (of all things) in the 19th century led to this persistent, widespread belief that everyone in the middle ages thought the Earth was shaped like a pancake. To the zealous defenders of Darwin (and science) against religion, it seemed natural to assume that everyone in those theological, unscientific times was just that ignorant.

At the same time, these stories make science look pretty easy, as if the basics of geography, the principles of hydrostatics, and Newton's theory of universal gravitation were right there, just waiting to be discovered — like the noses on our historical faces, we'd just never noticed them before. Then, out of the blue, Archimedes takes a bath, Columbus watches the masts of distant ships appear and disappear, Newton takes a little stroll under an apple tree, and *Voilà!* Science.

The truth is that humans have been pretty clever for a long, long time, and science is very difficult. Anyone can be a Monday-morning quarterback and think of Copernicus' or Newton's achieve- ments as milestones just waiting to happen, as if someone else would have done their work if they hadn't. But that kind of view is hard to keep up when you see how subtle and complicated most scientific advances really are.

In a recent issue of *The Absolute Sound* (No.110, March/April 1997, pp.16–20), a reader wrote in to offer his two cents' worth about a debate between Harry Pearson and Robert Greene. The issue was microphone technique; specifically, whether a spaced-omni or a coincident Blumlein configuration gives better results. Robert Greene responded to the reader with a mini-lecture on the history of science:

"In the days before the rise of science, people used to argue about physical phenomena in what amounted to literary terms. Being unable to perform correct and precise theoretical analyses and unwilling to perform experiments, they attempted explanations that sounded plausible to them but that were seldom closely connected to what really happens in the physical world."

Once again, humanity is depicted as stumbling around in a haze of scientific ignorance when, suddenly, everything changes — science rises up and lifts us from the muck of ignorance. All of us, that is, except this reader, whom Greene sees as some sort of Neanderthal who just can't get with the program. "It is somewhat surprising." Greene wrote, "to see this mode of behavior continuing in the modern world." (p.16)

What the reader had suggested was that spaced omnidirectional micro- phones are capable of producing more realistic imaging than Blumlein config- urations. Think of your left and right speakers as open windows in a wall dividing you from a live performance, the reader explained. You should obvi- ously place mikes where the speakers (or these imaginary windows) are — that is, spaced apart, just like stereo speakers in a listening room. Then, on replay, the sound coming out of each speaker would approximate the sound that would, in a live setting, pass through each of these open windows.

In his response, Greene charged that the reader's way of approaching the issue was worse than being wrong or not very useful — it was "unscientific." There is a big difference involved. After all, a scientist can be wrong about some- thing (or wrong about everything) and still have no truck with astrology, pyramids, or other kinds of pseudo-science. But this reader had crossed the line, Greene believed, because his views were not based firmly on experiments. And here Greene brought up another of those great old stories:

"Anyone who is speculating on this subject [of spaced-omni vs Blumlein techniques] without listening carefully to the Performance Recordings demo recording or some similarly controlled experiment in the same position as the specularers on falling bodies before the experiments of Galileo. Looking back, one sees that these specularers were just blowing smoke.... Without controlled experiments, there is no science."

These experiments on falling bodies helped make the name of the 17th-cen- tury Italian natural philosopher nearly a household word. Being a vocal support- er of Copernicus (for which Rome placed him under house arrest), Galileo had to demonstrate that Aristotle's physics was false. One point of attack was Aristotle's belief that a heavy object's weight determines how quickly it falls to

---

2 Even since the writings of Aristotle and Plato, it had been widely accepted that the Earth was round. A number of observations suggested it traveling north or south, different stars become visible at night, events like lunar eclipses occur at different local times of the day. More theoretically, most theories of matter (following Aristotle) stipulated that the heaviness of things like earth and water (and things made up of them) derives from their natural tendency to move to the center of the world. The shape that lets most earth and water minimize its distance to the center of any one point is, of course, a sphere. These and other arguments were well known to any well-educated individual.

3 I first heard this "reciprocity" argument about microphone techniques used by Mark Levinson nearly 20 years ago. If you get down to it, the mathematics of two-channel amplitude-encoded stereo, it becomes obvious that the hypothesis is false. However, the TAS reader did correctly point out that all coincident techniques of necessity discard the time-difference information between the two channels, which leads to a lack of "tooom." For Stereophile's recordings I use a spaced pair of B&K omnis as my main pickup, but mix their outputs with those of a quasi-coincident ORTF pair of cardioids to try to get the best of both worlds.

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*Stereophile, November 1997*
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the ground. The story goes that Galileo climbed to the top of the leaning tower of Pisa and simultaneously dropped two balls from the balcony, one heavy, one light. I had Aristotle been right, the heavy one should have hit the ground far ahead of the lighter one. Instead, they hit the ground at just about the same instant. That one, loud thud proclaimed the rise of modern, experimental science. Don’t believe what Aristotle says, Galileo taught us — do experiments!

This story, too, is now filed next to the one about George Washington and the cherry tree. Historians of physics agree that Galileo most likely never performed this experiment.4 He didn’t because he knew in advance what the outcome would be. How did he know? In part, he relied on just those allegedly unscientific and literary ways of thinking that Greene finds objectionable.

Galileo relied on one of his famous “thought experiments”: Suppose you were to drop, at the same time, two identical lead balls from the tower of Pisa. Obviously, they would fall side by side and hit the ground together. Even Aristotle would agree to that supposition. Next, suppose that you repeat the procedure. This time, however, you change things a little: you hold the two balls side by side so that they touch each other. Again, let them drop and suppose that they continue to touch all the way down. The crucial question is, Would these two balls fall faster or slower than the two that weren’t touching?

If you think about it correctly, the answer is obvious: The pair that touches — equivalent to one ball but twice as heavy — will fall just as fast as the pair that doesn’t. If not, then one of the balls must somehow act either as a drag on the other (so that the pair falls slower), or one of them must somehow speed the other one up (so that the pair falls faster). But if they fall at the same speeds as when they’re not touching, then both of these in-contact scenarios would seem to be impossible. The pair that touches must fall at the same rate as the pair that doesn’t.5

That’s how Galileo knew that Aristotle was wrong: A heavy object’s weight has nothing to do with how fast it falls. This is where the “experiment” requires some creative imagination: You’ve got to see that the (hypothetical) pair of balls that touches is equivalent to one object that weighs twice as much as one ball alone. (Instead of the balls just touching, imagine them being glued or welded together.) Since this heavier object will fall at the same rate as either of the lighter, individual objects, Aristotle must be wrong. No (real) experiments are needed.

If you think Galileo’s thought experiment is nifty, Einstein’s are even better. But the point is just that scientific advances are usually much more complicated than these simple stories lead us to believe. There is never any recipe or algorithm for progress. In fact, most philosophers of science have given up trying to define “the” scientific method, or trying to find a neat, clean way to divide all things “scientific” from all things “unscientific.” As in the case of Galileo, imagination and cleverness — the stuff of poetry and theology — often play roles in scientific advances. And controlled experiments are not always required. So if you’re going to cut someone down for being “unscientific” — and this seems to happen all the time, especially in the audio newsgroups — your sword may be dull.

More important, however — and in the spirit of Larry Archibald’s comments a few issues ago about homophobism in audio — criticism in this sort of tone is simply uncalled for. I don’t write “Undercurrents” to spread cheer and goodwill, but I must go on record against this sort of rhetorical bullying. It’s one thing to disagree with someone, but it’s another to paint him publicly as an idiot. Besides, humanity has supposedly outgrown the practice of public humiliation — here in this modern, scientific age, that is.

Just the other day, I, too, was criticized for being backward and unscientific. A friend’s system was sounding a little thin and shrill. He asked me to have a listen. “These components sounded great together in the store,” he explained. “But here at home they just don’t have the same spark.”


“I’ve got it! Get all your serial numbers, call up your manufacturers, and find out exactly when each of your components was made. I’m certain you’ve got a mismatch in there — maybe an Aquarian preamp with a CD player that’s a Taurus. That might explain the graininess.”

“Are you kidding?” he yelled. “You’re casting horoscopes for components? You better keep reading those books about the history of science — you’re losing it! You’re…”

“But that’s just it,” I interrupted. “I was reading Newton’s Principia in my listening room and, out of the blue, the source of your problem became obvious.”

“Oh really?”

“Yeah. A Mpingo disk fell off the ceiling and hit me on the head.”

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4 E. J. Dijksterhuis, The Mechanization of the World Picture, Princeton University Press, 1965, p.335; Herbert Butterfield, The Origins of Modern Science, Free Press, 1965, pp.93-94; Stillman Drake, Galileo at Work, University of Chicago Press, 1979, pp.415-416. Drake believes Galileo did perform these experiments, but only on the basis of a lost letter, the contents of which can be inferred. On the other hand, Drake agrees that Galileo was confident beforehand of their outcome.

5 Yes, fellow physicists, I am glossing over such details as the effects of air resistance and the aerodynamics of spheres. Galileo ultimately claimed that all bodies fall equally in a vacuum (which is correct), and he knew that one should choose very heavy bodies for an experiment like this in order to minimize the effects of their reaching terminal velocity (which they would reach later in their fall than light, less dense bodies).
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M7BH3-7
First started thinking about high-quality car sound after my wife and I migrated from Brooklyn to New Mexico in her '92 Nissan Stanza. Somehow, I had the notion that car stereo sound had steadily improved during the years we hadn’t owned a car.

I don’t know why I ever assumed that. After all, the 1955 Ford Customline I bought for $200 from my buddy Frank had a great radio—all tube and AM only, but with a rich, throaty sound that made the radio in my 1969 Plymouth Valiant sound anemic in comparison. And, as a Stereophile writer, I was certainly aware of the slipperage in the average home sound from the Golden Age to the present.

But, ever the optimist, I envisioned the Nissan’s factory-standard four-channel cassette system as being somehow... let’s see, what’s the right word... listenable.

Wrong! It was screechy, with no top or bottom to speak of, and the fader control succeeded only in placing the soundstage, such as it was, either way too forward or all the way to the rear. Four hours into our trip west I began to improvise a traveling system based on my Optimus 3400 CD player, a HeadRoom Supreme amplifier, and a set of Cambridge SoundWorks satellites and subwoofer. It looked as clunky as the Clampetts’ old Ford with Granny’s rocker up top, but I didn’t care—we had acceptable tunes for a 2000-mile trek.

This summer marked our second anniversary in Santa Fe, and— I’m not proud to say—my wife was still driving around listening to her factory system. What’s worse, from my point of view, is that she was happy with it. Or seemed to be. On the occasions she’d lend me her Griselda (it’s gray and a little old-fashioned), I would always carefully tune the sound until it was coming from the front, while surreptitiously bringing the tone controls back to flat. And when she’d get back in the driver’s seat, the first thing she’d do after adjusting the seat and the mirrors was to set the controls back to the way she liked ‘em: sound coming from wayy behind her, treble up, bass down. Sigh.

When she got a teaching job at the University of New Mexico in Albuquerque, I decided I’d take a break from tweaking the Rhino and set her up with a good basic sound system to make the 60-mile commute more tolerable—nothing fancy, I figured.

As usual, things got a little out of hand...

Radio, radio

I thought we’d build the system around the Blaupunkt Las Vegas CDM147 ($399) head unit because the company has always had a good reputation for their radios. My wife likes NPR and regularly listens to shows like Morning Edition, All Things Considered, Performance Today, Car Talk, and Whaddaya Know? This single CD player/controller offers a whole raft of other nifty features: four channels of 35W amplification; oodles of AM and FM station presets (including a feature called “Travelstore,” which scans and stores a locale’s six strongest stations); controls for Blaupunkt’s CDC-A05 10-disc changer ($399); its own silicone-oil-damped three-beam laser mechanism; a credit-card remote control; and a detachable faceplate. It also features a stereo minijack on a short tail that allows you to plug in an auxiliary line-level source such as a cassette deck.

The first time I took the faceplate off and stored it in its little plastic case, I was disappointed at how flimsy and cheap the case seemed. But the case’s soft plastic may actually be a feature, not a bug—as I discovered when I dropped the nifty hard-plastic case that held the Denon DCT-100R faceplate from the Rhino’s latest rig: The thick plastic latch shattered like ice. Now I walk around with a very classy red rubber band holding the case closed. Just to be sure, I dropped the Blaupunkt’s case repeatedly on my driveway. It remained intact. I take back all nasty thoughts of chintziness.

One feature on the Las Vegas initially drove me nuts: an advertising “scroll” that runs across its faceplate touting all of its features. This is its default setting; if a shop installs it in their demo wall, it will alert consumers to its selling points. It took me repeated tries to disable this function, but I fail to see why it should be the default anyway—it should be a...
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"hidden feature" that shops activate only for their displays. (An industry insider explained that an authorized installer would have disabled the scroll upon installation. When pressed, he admitted that most shops wouldn't read the owner's manual and activate this function for display purposes, so the firm made it a default. Which takes me back to Car Audio Truth Number One: Choose your installer carefully—see sidebar.)

One more Blaupunkt feature: They sent me an add-on, steering-wheel-mountable remote control called the Thummer. It's a wedge-shaped pod that straps onto the steering wheel and allows you to control volume, disc, track, and source. I have mixed feelings about this. On the plus side, it puts the controls where you can see them easily and manipulate them readily—which are safety features as well as convenience features. But bright sunlight shining on the faceplate will overwhelm the sensor, and if you're turning the wheel—or if you drive with your legs spread so that your knee obscures the sensor—it won't work. And, at $99, it isn't cheap. But in the right car—check the angle between steering wheel and faceplate carefully—this could be just the feature you're looking for.

Is a two-way speaker like a walkie-talkie?

After having borrowed Dynaudio's Jimmy (see the August 1997 "Car Tunes"), I was hot to try some of their speakers for myself. I spoke to Al Filipelli of Dynaudio, who recommended I try their System 220 Mk.II ($699), which consists of a 5½" woofer with a 3" voice-coil and dual-magnet structure, and a 1.1" soft-dome tweeter with 1.1" Magnaflux-cooled aluminum voice-coil. The set comes complete with grilles and an adjustable, shallow-sloped crossover.

"But what about bass, Al?" I whined. "I really loved the Jimmy's deep, powerful bass." So Al also sent a single MW 190—a 12" woofer with a 4" voice-coil ($399). Audio Connection's Bo Young installed this in a two-cubic-foot sealed-box enclosure in Griselda's trunk. I was startled that the woofer faced the trunk's interior, not the car's passenger compartment, but Bo assured me that's the way it's done.

To (ahem!) drive all this, my installer recommended an Xtant 3300C ($999) because it offers everything in a single package: noise gates, crossover, and multiple channels of amplification. "You just run a pair of signal cables in, attach a power wire, and hook up the speakers to the proper terminals," Bo explained. "It doesn't get much simpler than this." And even though, at the moment, the Xtant is hidden from view, it's a gorgeous piece of design. Its brushed-steel case, with brass-screen-filled die-cut square holes, is absolutely stunning—in fact, I know one high-end audio professional who bought one just for its looks.

What had started as a "simple" project had ballooned a bit. By the time Bo had mounted the tweeters high in the door and the mids in the factory spaces, run all the wires, built the woofer enclosure, installed the Xtant in the woofer box beneath the rear passenger seat and the head-unit in the dash's DIN slots, and placed the changer in the trunk, he'd performed about $500 worth of custom installation—quite reasonable, considering all the work involved, but a substantial enough sum. Plus, our hardware costs were up to around three grand. If you spent that on a home system, you'd expect pretty good sound. What does it buy you in a car?

**Talk to Your Installer**

I've said it before, but it bears repeating: Choosing the right installer can make the difference between a heavenly installation and a hellish one. In choosing Audio Connection (2774 Agua Fria, Santa Fe, NM 87501; Tel: (505) 474-8335), I'm fortunate enough to be working with one of the best. However, as important as it is to work with a quality shop, it's even more important to talk to them. Both your shop and you probably have some preconceptions about how to do the job—and if you're not communicating, they may not be the same ones.

This was brought home to me when Audio Connection's Bo Young worked on Griselda. I wanted the system installed before my wife and I took a trip to Denver. Bo knew about the trip, but thought I was going to drive the Rhino. The outcome? A last-minute sprint to get the system installed that left both of us needlessly frustrated and frazzled.

So talk to your installer—he'll probably appreciate it and do a better job for you. And if he doesn't seem to be listening, you'd better shop around.

— Wes Phillips
Is that a woofer in your trunk or are you glad to see me?
Well, I don’t think we’re done yet, but so far, so good. And I think we’re in striking distance of extremely good sound. Images are solidly focused and heads-up. Griselda has an immediate sound that I haven’t ever gotten in the Rhino, not even at three times the price. Part of this must be the Dynaudio tweeters and midranges, but I also think Bo has done a spectacular job of speaker placement, given how little choice he had.

However, we have a big problem integrating the bass and midbass. I was skeptical of the woofer-pointing-into-the-trunk concept from the get-go, so I’m going to start by simply turning the enclosure around and firing the driver through the rear seat’s fabric and foam. Sure, that’s probably not ideal either, but at the moment I reckon we aren’t energizing the passenger compartment enough to make the bass feel connected to the rest of the frequency range.

Minor quibbles include excessive sibilance on vocals and overall harshness on the high frequencies, which I attribute to the Blaupunkt’s D/A processor. I’ll try some others in the upcoming months. And ironically — considering that I chose the Blaupunkt because of its reputation for radio reception — Joan reports that it has problems locking in on the Albuquerque NPR station in certain parts of Santa Fe…

Music for Joan the Mad
I was nine years old before — confronted with an enticing tricolor concoction called a “Rainbow Roll” — I finally agreed to taste ice cream. My earlier refusal was not mere stubbornness; it was based on logic. If I liked ice cream, I figured, I would have been eating it all along.

I’ve become somewhat more adventurous over the years, yet I must admit I prefer reading books I’ve read before, and seeing films I’ve already seen — after all, this way I know I’ll like them.

So my reaction to Wes’s announcement that my car radio was to be replaced with a brand spanking new CD/radio system and real stereo sound was less than enthusiastic.

“What’s wrong with what I’ve got?”
“ ‘The sound is terrible, and it all comes from the rear.’ ”
“ ‘So?’ ”
“ ‘Besides, this way you’ll be able to play CDs if there’s nothing you like on the radio.’ ”

Now, that argument would have gone nowhere had we still been living in New York City (where I didn’t have a car, anyway), but broadcast choices in northern New Mexico are a bit more limited. Can you believe it — other CD I have to hand and want to shove into the slot in said faceplate, and the radio.

It’s great! I love it! Driving back and forth to Albuquerque every Saturday, I can sing along to Emmylou Harris or Junior Brown (“… and my wife thinks you’re dead,” I bellow happily off-key). Or settle back and listen to Mozart, or to La Nef doing — what else? — Music for Joan the Mad (Dorian DIS-80128). Or, of course, the radio. I was listening to KANW’s New Mexico Music the other day when I suddenly realized that I could understand the words to a song I’d heard a dozen times before (their playlist is not enormous). Had my Spanish magically improved? No such luck — but the clarity of my car stereo sure had.

Wes tells me that the imaging is much better, and he points out that getting the sound from in front is much more realistic. “After all, you don’t hear music from behind you at a concert.” True. Although I fail to see why having the Grateful Dead playing on my dashboard is any more realistic than having them crammed into my back seat.

Despite my audiophilistine attitude regarding sound quality, I really do appreciate the clarity of my new speakers. And I love the range of listening choices I now have.

What’s that? I should try one of your new Steve Reich discs in my car? But I don’t like Steve Reich. How do I know, when I’ve never listened to his work? It’s obvious — if I liked him, I’d have been listening to him all along.

— Joan Manes
If I had some money,
I tell you what I'd do...

Was it worth it? Read the "Music for Joan the Mad" sidebar to find out what my wife thinks. As for me, I definitely think so. I learned a lot from setting up this system. In many ways, it really is a simple system—one that could have been grown in stages. For about a grand you could buy and install the head-unit and Dynaudio two-way System 220 Mk.II speakers and have sound that would put any factory-stock system to shame. Add the Xant and the sound would get far, far better. And the Xant is ready for additional speakers—it's got five channels of amplification, so the next step would be the subwoofer and its enclosure. The final steps would be adding the changer, external D/A processor, or even more speakers. You could do it all gradually, as you had time and cash.

I took Griselda out for a spin the other night. Another late night working, and I really wanted to spend some more time listening, thinking… ummun, not writing. So I popped the faceplate in and surfed through my wife's CDs as I drove south on Cerrillos Road. I spent a few minutes listening to American Beauty, admiring Phil Lesh's always-tasteful bass-playing, but I wasn’t ready for a whole record of the Dead. Dave Van Ronk was good for "Duncan and Brady" (The Folkways Years, Smithsonian Folkways SF 40041)—what a tough song! “When the women all heard ol’ King Brady was dead / They went on home and re-rag'd in red / A-slippin' and a-slidin' and a-shufflin' down the street / In their big Mother Hubbards and their stockinged feet / He’d been on the job too long.”

But I knew we'd done something very, very right when I cued up Emmylou Harris' Roses in the Snow (Warner Bros. 3422-2). If you don't know it, you should—it's a certified masterpiece. She was never in better voice, and she was backed by a stellar band: Ricky Skaggs, Tony Rice, Albert Lee, Jerry Douglas, the Whites, Willie Nelson, and Johnny Cash, among others. It was her bluegrass album, you might say. But gosh a-mighty, she made bluegrass sound fresh-made.

I found myself singing along, cater-wauling those old familiar songs as though Emmylou needed me. I couldn't stop, not even on Paul Simon's "The Boxer"—the weakest song on the record. I had to "li-li-li" every "li-la-li" li-li-li like it meant something. I was no longer the impartial observer. I'd become one with the music. That just doesn't happen with mid-fi.
"Bravo, Bryston! A landmark...a reference...a triumph...a steal!" Stereophile, May 1997
Sam Tellig

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Cello’s First Chair
Barry Willis visits high-end audio entrepreneur Mark Levinson

Nothing at 41 E. 62nd Street in Manhattan offers any clue as to what sort of business takes place inside. The waiting room feels vaguely monastic: straw mats on the floor, a row of shoes near the door. Like a day spa offering acupuncture and shiatsu. There’s no corporate name, no logo, no mission statement.

A clock running six and a half hours late hangs above a receptionist’s unoccupied desk. An enormous white dog is asleep under framed pictures of old blues artists: Son Thomas, Etta Baker, Pernell King, Cora Fluker, Big Joe Williams.

An energetic young woman named Elizabeth invites us—photographer Courtney Winston and me—to make ourselves comfortable. On a notepad I draw a crude pyramid with a little triangle at the top, like the one with the mystic eye on the back of the dollar bill. “If this is the audio market,” I tell Courtney, “Cello and a few other companies occupy the ultimate High End. Mark Levinson is one of the people who got it all started.”

As if on cue, the man in question appears. He greets us with an almost imperceptible bow. “Sorry to keep you waiting,” he says. “I’ve got a guy here who wants to put Cello in all of his cineplexes.” A sale like this would make most businessmen dance on their desks, but Levinson isn’t the demonstrative type. He’s truly apologetic.

While he takes care of business, we head upstairs to the third floor. Cello recording engineer Kurt Lundvall (son of Bruce Lundvall of Blue Note fame) shows us the thickly carpeted music room, its walls and ceiling encrusted with modular RPG (Refractive Phase Grating) Diffusers. Gray bass traps soften the corners. The windows are covered with heavy laminate shutters massive enough to block out the noise from the streets below. A single door weighs 350 lbs. The room is designed to be acoustically neutral, but not dead. It’s very quiet.

Apart from the acoustic treatment, the place doesn’t look much like a recording studio: no mixing boards, no glass-paneled booths, no racks of signal processors. The recording equipment—modified B&K measurement microphones, Cello Encore preamp, Apogee AD1000 analog-to-digital converter, two Nagra-D digital open-reel recorders, and two pairs of Stax Lambda Pro Signature headphones—fits easily on some modest wooden shelves.
As you may have noticed, our ads tend to have answers for just about everything. Like where to bow your head to at sunset (Skanderborg, Denmark, the one and only home of our famous speakers, which lies exactly east of Aamoraq, Greenland), whom to worship on lazy, music-filled Sunday afternoons (may we humbly suggest our chief tester Erik 'The Ear' Nielsen whose fame in audiophile circles has reached that of any given dead pop star, except Josef Stalin) or, last but not least, how to build the penultimate, unsurmountable, unbelievably true loudspeaker (by lovingly crafting it around a voice coil three times bigger than the competition, or twice the size of Josef Stalin). This time, we’re just telling you what to do tonight. Switch off your beloved amps! Turn on the bloody computer again. And visit us at our new and extremely knowledgeable internet site on the WorldWideWait (it’s at www.dynaudio.com, just in case you’re the type who doesn’t read headlines) Where, besides having tremendous amounts of fun, you will find some very good reasons why our speakers sound so open, airy and natural. How we manage to get such a well-defined and powerful bass. And, of course, some hints on why our speakers are -quote- "imaging like a bastard!" Should you happen to not have an internet access, you may contact us directly for your free personal snail-mail copy of our "Book of Truth" at (847) 288 1767 (phone) or (847) 288 1853 (fax). And don’t forget to have a close look at our Contour 3.3 (pictured here with the world’s first famous works raccoon, Knudsen) which is so brand new you won’t find it even on the net. :)

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The top shelf holds a box of old Capitol master tapes, here for remastering. They’re insured for a million bucks each.

It’s really more a rehearsal room. Visiting musicians like violinists Vadim Repin and Julian Rachlin, composer Marvin Hamlisch, or jazz greats Lee Konitz, Tommy Flanagan, and Jacky Terrasson meet here to practice and improvise, sometimes recording themselves and listening to the results through Cello equipment.

Memory fades. How can you make a claim for playback accuracy if you don’t have the actual musicians there for comparison?

Max Roach’s custom-made drum kit stands in one corner, near a shiny-black August Forster grand piano. A sofa is occupied by a pair of large stuffed animals. Two frenetic bobtailed cats, Giacomo and Little One, play hide-and-seek under the piano and behind Levinson’s treasured double bass—made in 1680, he says—and its fluegelhorn in its case. Along the walls stand Indian stringed instruments: a sarod and several tambourines. Levinson, a longtime student of Ali Akbar Khan, may be the world’s only practitioner of North Indian music on the upright bass.

He joins us, speaking emphatically about his crusade to introduce the professional music community to “the Cello process: no EQ, no post-production, no editing. We want to empower musicians. They have gotten used to the idea that their performances are simply the raw material which engineers use to make the final product. Having ultra-accurate playback gear in such close proximity to a rehearsal space is a revolutionary concept.”

In a sweeping statement that takes in the entirety of the commercial music world—musicians, recording engineers, and playback equipment designers included—he says, “Memory fades. How can you make a claim for playback accuracy if you don’t have the actual musicians there for comparison? That’s how we do it. Most people in this industry make claims for accuracy based on playing commercial recordings. It isn’t honest.”

Levinson builds a convincing case with a few well-chosen words. He points out that one of the most persistent problems in the audio industry is “the lack of a basic standard for tonal accuracy. Did you know there’s a 15dB spread in tonal balance among high-end loudspeakers? We have a video standard for color balance. Why can’t we have something like that in audio? That alone would go a long way toward resolving these disputes.” Listening to Levinson and Lee Konitz improvised “something in B-flat,” then immediately hearing the recording through an assortment of Cello gear, I couldn’t help but agree that reality is the only valid check for accuracy.

In the hallway, he takes a call from a confused customer in Florida. The problem? An inaudible center channel in a megabuck home theater. Levinson patiently walks the owner through a system calibration, with the intended soothing effect. As Cello’s director, he exercises the skills of the diplomat and therapist many times a day.

One might assume he comes by it naturally: His father was Harvard and Yale psychology professor Dr. Daniel J. Levinson, author of (among many titles) The Seasons of a Man’s Life, a seminal work that launched the field of the study of adult development. Privately, though, Levinson is almost awkwardly shy. In his preferred attire—blue jeans, T-shirt, and a pair of worn-out moccasins—he’s easy to spot among the suited and polished legions at trade shows and high-level pow-wows.

We’re here a week early, he insists. Scheduled for delivery in a few days is a Sonic Solutions 24-bit workstation. Like most audio professionals, Levinson is wildly enthusiastic about “24/96,” the 24-bit, 96kHz-sampling-rate operating standard of the Digital Versatile Disc. “I think substantially improving the Compact Disc is a dead issue,” he tells us. “24/96 is a huge leap forward. We haven’t even begun to explore the potential. It won’t be long before you’ll be able to buy a machine that will totally blow away everything available now.

The future is going to be really amazing.”

“Really amazing” may be an accurate prediction for Cello, too—especially if all goes well with his new financial partner, whom Levinson describes as “one of the creators of the Internet” and “an intensely focused businessman with visionary ideas about Cello’s direction, and the resources to make them happen.” The company’s new headquarters at E. 77th Street and Madison Avenue are scheduled to open in January 1998. In addition to showrooms and offices, the building will house a world-class restaurant with live music and a New York sitting room for, in Levinson’s words, “Italy’s greatest tailor.” Gianni Campagna. Campagna and his son Andrea are artisans in the old-world handmade tradition. Their creations—no sewing machines, please—are worn by folks like actors Pierce Brosnan and Sharon Stone.

This development has been on hold more than two years due to other demands, such as a contract with the Library of Congress to build a room for no-compromise archiving of the Library’s millions of recordings, reaching all the way back to Edison’s earliest efforts. The Library’s Cello Room boasts Grandmaster loudspeakers and Performance amplifiers, a number of Audio Suites and Audio Palettes, several custom-made Cello reference analog tape recorders—Nagra-T transports with Cello electronics—as well as components from other manufacturers. The Library’s updated Audio Preservation Department enjoyed its public debut March 13, 1997.

“Let’s watch a video,” Levinson says. We settle down in front of a big screen flanked by towering loudspeakers. On the floor are eight large silver boxes: Cello’s Performance amplifiers. As configured here, they are capable of 6000 watts each into the 2 ohm, 99dB-sensitive Grandmasters. This system is a deadly weapon. Mismanged, it could deafen a man in less than a minute.

Levinson cues up a laserdisc and zips to a nice “unplugged” performance of the Eagles’ “Hotel California.” The picture from the line-quadrupled Ampro projector is marvelous: rich, saturated colors, deep contrast, sharp detail, depth perspective. The sound, of course, is glorious. Courtney Winston, seen-it-all habitué of Manhattan’s art scene, is seriously impressed.

“Let’s play some music,” Levinson says. “No pictures. What did you bring?” Courtney produces a Capitol Jazz CD reissue of Miles Davis’ Birth of the Cool. Kurt Lundvall retrieves their recently remastered 20-bit tape of the same recording and threads it onto a Nagra-D. Levinson starts the Nagra about 15 seconds after the CD, and switches between them as we listen. Audio technology was remarkably good 50 years ago, but the remastered 20-bit version has life.
A CENTENARY TRIBUTE TO GEORGE GERSHWIN

“The popular or jazz musician . . . can manipulate the raw materials of Gershwin’s inspiration to fit the mood, the prevailing style, and the performer’s own personality . . . . For me, the individual touch of the performer is essential . . . .” — HYPERION KNIGHT

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Celebrate the forthcoming centenary of George Gershwin’s birth with this stunning new recording from Stereophile. This disc captures the spirit and freshness of Gershwin. His saucy rhythms. His jazz syncopations and “blue” notes. The way Gershwin himself was in synch with a youthful America.

• Get set for Rhapsody in Blue, arranged for piano and chamber orchestra by Joe Cea — with a marimba added for a touch of exotic sonority. The instrumentalists were encouraged to exercise their imaginations in their respective solos, and the opening clarinet solo, which flirts with swing rhythm, is played like a fantasy. You must hear this!

• Gershwin composed the Three Preludes for solo piano. Joe Cea arranged them for orchestra, taking his cue from Gershwin, who said: “The rhythms of American popular music are more or less brittle; they should be made to snap, and at times to crackle.” In these performances, they do!

• The program continues with Four Songs arranged by Earl Wild, and Five Songs, arranged by Joe Cea and Hyperion Knight. All for solo piano. These include some of the standards Hyperion Knight has performed to great acclaim at the Rainbow Room in Rockefeller Center, New York City — such as “Fascinatin’ Rhythm,” “The Man I Love,” “Someone to Watch Over Me,” and “They Can’t Take That Away From Me.”

• The program concludes with the Porgy and Bess Fantasy, composed by Earl Wild. Truly a Gershwin extravaganza!

“You can almost look into the soundstage to see where the musicians are.”

Stereophile’s John Atkinson used two pairs of time-aligned microphones for both excellent imaging and a sense of space and envelopment. For the primary mikes, he used a pair of cardioids, full-range. These give superb resolution in the midrange and treble, but lack low-frequency bloom. So JA also used a pair of omnidirectional mikes to give tonal richness and a sense of space and environment. Sam Tellig puts it this way: “With cardioids, there’s where there. With omnis, there’s there there.”

“The result,” says a more restrained JA, “is the best of both worlds. You get an accurately defined image, where you can almost look into the soundstage to see where the musicians are. But at the same time you get some of the sense of bloom that you would have heard had you been at the live event.”

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Levinson rolls out a Palette preamplifier/equalizer on a one-piece Lucite stand. As we listen to the original "Moon Dreams," he switches the Palette's equalizer in. "Those cymbals—they're a little soft, don't you think?" Courtney nods. "Turn the 25k control until they feel a little more real." The cymbals take on increased presence. "The bass seems way off in the background, doesn't it?" Levinson says, indicating the left-most of the Palette's six tone controls. Guiding Courtney through re-equalizing the old recording by ear, he explains how this control affects that instrument, in the process bringing the musicians more into the room. The music becomes fuller, more present, more involving. Finished with the makeover, Levinson switches the equalizer out. The soundstage collapses into the sonic equivalent of a cardboard cut-out. It's a stunning effect, a magician's trick.

Mark Levinson doesn't believe in the inviolable preciousness of commercially recorded music. "It's absurd," he says, referring again to nonexistent playback standards. "How do we fix it? The Palette." He doesn't hesitate to criticize equipment or recordings made by others, or to apply liberal doses of the Palette's magic to make them sound better. In a violation of one of the basic tenets of the high-end religion, he encourages his customers to do so, too: just twist those dials until that less-than-perfect recording sounds more like music.

He admires good engineering in competitors' products, but declines to discuss them, preferring instead the bigger topic of what he sees as the industry's malaise: the eternally unhappy audiophile and his endless upgrade syndrome, and the cartel of manufacturers and publishers who perpetuate it. Dealers are largely powerless pawns trapped in the system, Levinson feels, but the industry overall seems more interested in making a quick buck than in satisfying the musical needs of the people who support it.

That's the essence of his famous "boxes" speech, one that might be called the Levinson Leitmotif. It goes like this: "Most [dealers and manufacturers] aren't selling musical instruments; they're selling boxes. And what they need to do to stay in business is to sell more boxes. That's why audio products have these ridiculous revisions and upgrades—to keep the customer coming back. Manufacturers exploit the customer's basic insecurity. They need to keep him feeling that really satisfying performance is just a step away, the next model up, whatever it is that's just out of his reach. The customer spends all of this money and in the end has nothing but frustration and dissatisfaction.... High-end magazines stir up this dissatisfaction, too. Why else do you have a Product of the Year?"

He argues that many in the High End participate in a tacit conspiracy to separate the music lover from his liquid assets as often as possible. "From product design to product termination, the whole process is extremely cynical," he says. "There are two different themes in audio. One is sincerity, dedication, and love of music. The other is: How do we make the maximum amount of money?"

Whether from marketing or engineering, Levinson thinks many companies have dead-end product-development programs. "They lack the engineering discipline to produce a truly finished product. Cello has never discontinued a product. Some have been on the market 11, 12 years virtually unchanged." The Slate received an Academy award at HI-FI '97. "Twelve years old, no changes. How revolutionary was it 12 years ago?" Levinson asked.

"There are lots of problems in the retail environment. It's all in such a primitive state, with so much ignorance and a huge shortage of resources.... I don't want to devote my life to an industry that perpetuates unhappiness. Accuracy and musical satisfaction are qualities that don't change. Cello is where people come when they want to get off the merry-go-round." He believes there will be a strong need in the near future for the "audio designer," a sort of sonic architect. For that reason, Cello is starting a school to train audio professionals and is actively recruiting students.

We walked a few blocks to one of his "favorite little Italian places," Nanni il Valetto. The restaurant is sumptuous but intimately scaled, and almost empty at this hour. Chef Luigi Nanni, one of several who introduced real Italian cuisine to New York 40 years ago, greets Levinson as an old friend. We order swordfish steaks with vegetables, and a nice California chardonnay. I ask how he got started in audio.

"I always loved music. It was part of my life right from the beginning. One of my favorite family snapshots is a picture of my brother Doug and me—we must have been, like, four and six—standing by our Garrard record changer. I remember playing Bix Biederbecke records on that machine and trying to copy his solos with my cornet. One of our family heirlooms is a Bösendorfer piano that was hand-picked at the factory by Gustav Mahler for my great grandfather. It's in my daughter's home now." The genealogical angle again: Levinson's mother, Maria Hertz Levinson, is the grandniece of 19th-century German physicist Heinrich Hertz.

"By the time I was 18, 19, I was pretty deep into hi-fi, too. But I realized that most of it didn't sound very good. So I decided to start building my own equipment. Dick Burwen was one of my first mentors. I learned a lot from him. In the beginning, I worked in my parents' basement. My first commercial product was a preamp, the LNP-1, in 1971. We made exactly four of them, but it was enough to show my parents that I was serious. My mom was disappointed that I never went to college, but my parents believed in me enough to put up $15,000 for me to start my company.

"That was a lot of money in the early 70s. They gave me everything they could. That was the start of Mark Levinson Audio Systems, MLAS. My next product was another preamp, the LNP-2. We sold thousands of them. Eventually, we had a factory with more than 90 people, and a whole line of products: tape recorders, amps, and preamps... MLAS did very well. In 1979, we needed more capital to push the business up to the next level and I signed a deal with an investment group, giving them 57%. That group was the core of what later became known as Madrigal Audio Laboratories.

He then offers his version of what he calls "an untold story": how Mark Levinson the man got separated from Mark Levinson the product. "It wasn't long before we had some serious differences... the heart of the matter was that Sandy Berlin [Madrigal's erstwhile kingpin, now heading up speaker company Revel—Ed.] forced me out two years later..." A subsequent lawsuit resulted in Mark being unable to use his name in connection with the audio industry.

Most dealers and manufacturers aren't selling musical instruments; they're selling boxes.
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He describes what happened with the detachment of a man who witnessed a horrible accident a long time ago. “But miracles do happen. An attorney named Allen Duffy knew I didn’t have the resources for a legal defense and agreed to work for almost nothing. His initial efforts enabled me to start Cello in ‘84, despite all the threats and legal pressure. We fought all the way up to the US Second Circuit Court, and finally won. “That was 1986. They got the right to use my name, but I got the right to work in the field I always loved. Allen died of leukemia three months after that. I could never repay him, but I promised that if I could ever help his family, I would.”

That promise was the beginning of the Music Maker Relief Foundation, which supports the traditional musicians whose pictures line the halls at Cello. Allen Duffy’s son Tim, who counts Eric Clapton among his supporters, is the musician, folklorist, and musicologist who first approached Levinson with the idea of helping these artists, many of whom live in dire poverty in obscure parts of the south. Based in Pinnacle, North Carolina, Tim travels throughout the south seeking out and recording them. Music Maker recordings are available from the foundation at (910) 325-3261.

In the battle with Madrigal, “A lot of important personal relationships were damaged,” Levinson says. “It was particularly painful that my friend and mentor Mike Kay would choose to side with them.” He mentions a 16-year rift with his friend Peter McGrath that was only recently healed. “The incident was symptomatic of a change that took place in the industry then, when the hard-business types began to take over.”

He looks out the window. Silence. I offer him a quote from photographer Helmut Newton: “The past is important, but it is still the past.”

“That’s right,” he agrees. “The future is the important thing. When the high-end industry began, it was extremely radical—a reaction against mediocrity, a real revolution. But somewhere along the way it became stagnant. It’s an establishment now, full of people in comfortable little niches. When I started Cello I was told that building music systems rather than specialty components was going to upset the industry. I was told that I was committing suicide with my career. It didn’t matter. It’s more important to do what’s right than to be politically correct.”

He credits the hard work of people like Cello engineer Tom Colangelo and Tony DiSalvo [President of the company that manufactures Cello equipment.—Ed] with freeing him from product development. “Something brought me to New York,” he says. “I wanted to take a different course. I wanted to make direct contact with the people who bought Cello equipment. Can you imagine a company president opening a boutique and running it by himself? I ran the Cello showroom from March of ’90 to January of ’92 all alone, without even a secretary, but it was the foundation for our new company. We are redefining the bridge between the people who make the products and those who use them. What’s new isn’t a DAC or a loudspeaker, it’s a mindset.”

We step out into a warm late afternoon. A short cab ride later, we’re back at Cello. The building is almost empty now, save for Elizabeth (“I keep his chaos under control”) working late, Kurt and the cats somewhere upstairs, and Kiva, the hulking Great Pyrenees I saw sleeping in the hall earlier. While Levinson returns phone calls, I play with the gear in the demo rooms: Serafins; Stradivari Legends, Premieres, Masters; Encores, Duets, Palettes. Good, you ask? Is nourishing a superlative?

He returns later—I’ve lost track of time—and asks if I play music. I admit to tuneless whistling, singing in the shower, and to having dallied long ago with a garage band as an incompetent bass player. But play music? No, I listen. “Let’s try something,” he says, and we go back upstairs to the studio.

He explains the role of the tamboura in Indian music. It provides the underlying meditative drone over which other musicians weave a melodic texture. He kneels next to the instrument and tunes its four principal strings. “Like this,” he says, plucking a slow four-note riff that makes the whole instrument ring. “Then start again before it dies out.” I likewise kneel and likewise pluck. He corrects my clumsy efforts. Soon I’ve half-got the rhythm. Levinson swings his bass upright and begins a sort of raga improv that seems to flow up and out of the room we’re in.

It’s not a Western-tradition kind of music—linear-logical conflict-and-resolution—but a feeling-state kind. What I hear as he plays is more than the woody resonance of his bass or the warm serenity of the Indian melody. I hear a yearning for a deeper connection, an almost religious need to melt the barrier between player and listener. A healing ury—the high purpose of music.

Taking the elevator down, I notice him frowning and rubbing his fingers, frustrated like an out-of-shape athlete. Saxophone legend Lee Konitz has been after him lately to return to playing, but he hasn’t been able to practice much. “That’s what I would like to get back to,” he says. “I want this business to get to a point where I can step back a bit and play more. That’s really important to me.” Friedrich Nietzsche, perhaps apocryphally, summed it up this way: “Without music, life would be stupid.” That’s always been the gospel according to Mark.

I was told that I was committing suicide with my career. It didn’t matter. It’s more important to do what’s right than to be politically correct.
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Hendrix's languishing legacy becomes a family affair

Back in 1966, James Marshall Hendrix roared out of the evening sky like some night bird flying, electric plumage alive in a thousand shades of blue and some hues whose names no one knew. Then, just as suddenly, he was gone...at all of 27. Now, 27 years later, the original voodoo child has made a slight return.

Sitting in the control room of Electric Lady Studios, the mother womb/creative combine he fashioned for the innovative guitarist and songwriter, engineer Eddie Kramer's face is aglow with pride and nostalgia for the body of music he helped interpret and realize at its inception. This music has recently been resurrected from the original two-track mixdown tapes as part of the opening salvo of The Hendrix Family Authorized Edition — the restoration of Jimi's core catalog to reflect the guitarist's original sequencing and sonic intentions.

As we audition track after track of digitally re-mastered music, Kramer revels in a series of heretofore inaudible details, enhanced low-end extension, and an extraordinary new level of clarity that reveals daring panning effects, subtle reverb tails, and surprising soundstage depth. "Kvelling like the creative mensch he is," Kramer states proudly that "Jimi was the greatest artist I was ever privileged to work for." When I offer up a parenthetical explanation of my Yiddish references, Kramer laughs and hits the Pause button.

"Hey, I'm Jewish, and I know from kvelling. It's funny, when you started talking about Yiddish...maybe there's a connection or some kind of unique camaraderie there between the Jewish soul and Jimi's black soul."

Hendrix can lose the scowl—after years in limbo, his catalog of recordings is finally in good hands.
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Stereophone, November 1997
"Well," I replied, "From my background in jazz and my readings of Finnegans Wake, I developed this theory that the Blacks, the Irish, and the Jews were the same people. From a similar history of suffering and oppression, they developed parallel streams of poetic lyricism marked by a very spiritual worldview and an ironic sense of humor. Of course, the only people who can accept this notion are the Blacks, the Irish, and the Jews."

"I think you're correct. I grew up with classical music in a Jewish household playing the piano, my mother used to sing, and my dad was a violinist and we had a string quartet. My father was even the president of the James Joyce Society, to bring that in. We used to read Finnegans Wake aloud as kids. What a nutcase my dad is, and, God bless him, he's 90 years old. So maybe there is a connection—I don't know."

"Well, that's certainly what Finnegans Wake is all about—saying that it's all connected..." 

"...that it's a complete cycle...

"Right. What Joyce was doing transcended writing—it's like pure music and color."

"Uh-huh," Kramer smiles. "That's just the way Jimi was to me—pure music and color."

Such are the mystic flights of fancy inspired by Jimi Hendrix. Nearly three decades after his death, the guitarist retains his artistic vitality and cutting edge as each successive generation discovers anew his music—modern and forever young in the manners of Louis Armstrong and Robert Johnson, Charlie Parker and Charlie Christian, John Coltrane and Wes Montgomery.

Self-taught, intuitive, and blessed with a workaholic spirit and experimental verve, Hendrix cut a wide swath through the worlds of rock, blues, R&B, and jazz over the course of three trailblazing studio albums with the Jimi Hendrix Experience (Are You Experienced, Axis Bold As Love, Electric Ladyland), one memorable concert performance (A Band of Gypsys), and a vast amount of material he was preparing for a double album at his brand new Electric Lady Studios in the last four months of his life. (That album, the remarkable First Rays of the New Rising Sun, has been assembled from the posthumous release The Cry of Love and selected cuts that originally appeared on Rainbow Bridge and War Heroes.) In the process, Hendrix completely redefined our expectations of the electric guitar, even as his songs stretched the imagery of rock and the technology of the recording studio. Those records captivated the hearts and minds of contemporary singers and instrumentalists, black and white alike—everyone tried to emulate the sound and phrasing of this psychedelic troubadour.

Thankfully for future generations, after a protracted legal struggle, the Hendrix family, under the corporate umbrella Experience Hendrix, has regained control of his estate from the shadowy music-biz bottom feeders who'd controlled the guitarist's musical legacy since the afternoon of his funeral—the same hucksters who had the temerity and bad taste to chop up, edit, overdub, and re-sequence his classic studio recordings in an attempt to bewitch yesterday's record collectors and today's CD buyers into buying rehash after rehash of his original studio recordings.

Jimi's half sister Janie Hendrix is an engaging, good-humored individual who would much rather speak about the spirituality and humanity of her stepfather Al Hendrix, of the company's pride in restoring and safeguarding the guitarist's legacy, of their 10-year plan for releasing Jimi's music in an orderly and intelligent manner, and of her creative pride in how her cover art for First Rays of the New Rising Sun reflects the primary colors of Jimi's clothing and his musical aura. But inevitably questions arise as to the protracted legal proceedings to reclaim Jimi's legacy from the sharks who were setting up offshore entities to buy up rights to the music—in essence, selling off the assets to themselves.

"[Leo Branton] was actually in conflict of interest. What he was doing was setting up offshore companies to buy the rights, but he was an entity in those companies. The judge was quite angry. The litigation took almost three years. They fought with every delaying tactic they had. Leo Branton was our former attorney who created these Caribbean entities. He was a civil rights attorney who handled people like Nat 'King' Cole, Angela Davis, the Black Panthers. So his approach to my father was, 'I'm the attorney for Nat 'King' Cole; and if there's any money to be found, I'll get it—I'll be your attorney for life. If not, you don't owe me a dime.' So upon a handshake, that whole thing started. Unfortunately, he did the same thing to the Cole family he did to us.

"Alan Douglas came to Jimi's funeral and introduced himself and said that he was a producer and friend of Jimi's and that they had worked together. And my Dad had no way of knowing. He had heard of Eddie Kramer, but never of Alan Douglas. The next thing you know, Alan had hooked up with Leo Branton, then he went to Warners, and that's how that ball started rolling."

"They very easily could have sold off their interests when they had Douglas and Branton and MCA and all of these heavyweights circling around them, but they hung tough," says catalog manager John McDermott, a dedicated writer.
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and Hendrixophile whose research with Eddie Kramer on Hendrix: Setting the Record Straight (Warner Books) and Jimi Hendrix Sessions (Little, Brown) examined the phenomenon of Jimi’s career from 1966 to 1991, offering a very detailed view of an area most other Hendrix books don’t deal with: what happened after his death. “I originally got involved because I couldn’t understand why the posthumous releases were so bad and why none of the original guys were involved. I thought it was insane. When I heard of their lawsuit, I just volunteered my services to the family and their attorney Yale Lewis. From there we just developed a great relationship, and I’ve been involved ever since.”

McDermott’s involvement has resulted in the return of such original collaborators as Eddie Kramer, the creation of digital and analog safe copies of the entire Hendrix tape library, and the CD and limited LP releases of the original core catalog. From the primitive four-track 1/2” tapes of Are You Experienced through the dynamic 16-track 2” tapes of the reconstituted First Rays of the New Rising Sun, these recordings trace the progression of recording/playback technology from Phil Spector and Brian Wilson to George Martin/The Beatles and Frank Zappa — precisely that moment in history when the technical tools began to evolve in direct response to the challenge of the music. As these CDs and LPs illustrate, Kramer and Hendrix were among the first ones to view recording tape as an extended canvas and to treat it accordingly.

“Without a doubt,” chimes in veteran Sterling Sound mastering engineer George Marino, “that became part of the music. It wasn’t just, ‘Let’s capture the music through the recording medium.’ The recording and mixing process itself was like another member of the band. Most of my recollections of hearing this music was on the radio in mono with all that compression. So the stereo imaging and the panning things, which never came across as they were on the original vinyl cuts, and the general depth were probably the most impressive things to me. A lot of what they were doing in the sounds they were trying to get was based on the desire for depth of imaging and experiments in moving things around, and those effects — they were really on the edge in those days. I think that the limitations of the medium then forced them to become a little bit more creative and adventurous. They’re not as pristine as far as being proper, but there’s definitely more of a human element at play.”

Through the sonic dedication of Marino and Kramer — including individual azimuth adjustments and tweaking for every single song — many of these creative human elements, heretofore veiled through the limitations of the medium, are now audible front and center for the first time. Such as an unbelievable phasing effect Kramer and Hendrix pulled off at the beginning of “Voodoo Child (Slight Return).” I have a typical New York City apartment with an archway separating the living and dining rooms. Listening late one night, I was startled to hear the rhythmic wah-wah figures, seemingly disembodied, arrive from out in the hallway and through the archway before settling in the stereo field. Damn.

Kramer smiles, as well he should — these recordings are a testament to his and Jimi’s creative symbiosis. While Kramer wasn’t Jimi’s producer per se, this innovative engineer functioned as Hendrix’s George Martin, intuitively recognizing what the guitarist was hearing and allowing him to create, secure in the knowledge that Kramer would be able to actualize any colors he could imagine — until the process became largely unspoken, and the artistry itself transcended the primitive nature of the technology.

“That’s a very good point,” Kramer concurs. “In revisiting this music for these re-masterings, I’m able to hear the genesis of not only Jimi’s playing and his music, but also what I did with it. And hearing the ‘primitive’ sounds, as you so aptly put it — I think that’s very true. I think the way that we functioned in those days, we had to integrate all of the music and the technology — everything had to be done then and there. You didn’t have a chance to come back and fix it later. You had to get it right then and there. That immediacy forces you to really pay attention to detail and think ahead.

“By the time Hendrix came around in January of 1967, I had this cool background in classical music, and how to record symphonic works like Elliot Carter’s Concerto for Piano and Orchestra using three mikes for left/center/right — the balance being controlled by the conductor, which was the whole key to the thing, I took those techniques from classical music and applied it to recording rock. Jimi was able to play in such a way that it made my job easier, because all I had to do was just mike it correctly and interpret what he was doing. Now there’s where the trick comes in — in the interpretation of the sound. Because he would play a particular part with a lot of distortion or a particular device, and it was my job to enhance the sound and put it on tape in such a way that it would improve what he had done in the studio. And to that end we were flying by the seats of our pants, because I don’t think we really had a clue as to what we were doing; we were just doing it — there was a certain amount of instinct going on here.”

But what had begun as instinctual experiments in sonic color and imaging eventually became the inspiration for generations of recording artists and engineers. The fact that we’re sharing this information today in a magazine such as Stereophile is testament enough to the impact Jimi Hendrix continues to exert on modern audio — a creative medium he and the Beatles first nurtured.

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PORT-AU-PRINCE, HAITI — It's Thursday night at the Hotel Oloffson, time for the weekly performance of the voodoo-rock band RAM, whose half-Haitian, half-American leader, Richard Morse, also runs the venerable hotel. The opening act is the sweet-voiced, subversively poetic singer/songwriter Manno Charlemagne, an Oloffson resident since his election as mayor of Haiti's capital in 1995.

But this is no ordinary Thursday show. It's three days before Carnival, Haiti's Mardi Gras, and Mayor Charlemagne still hasn't come up with the money he's promised for RAM's parade float. After Manno's set, Morse confronts him; tempers flare, and the mayor, who also owes a year's back rent on his hotel room, is summarily evicted before a packed house. A few minutes later Haiti's president, René Préval, arrives to smooth things over and stays for most of RAM's set, dancing to the voodoo beat. The following day Manno is nowhere to be seen, but the band is assured that the float will be paid for, and a construction crew hurries to complete the two-storey wooden structure in time for the parade.

The following night RAM plays at another hotel, the Ideal Villa, in the upscale Del Mar district. Morse's wife, Lunise, and her two-woman chorus sing the first few songs, backed by electric guitar, bass, and keyboard, plus three handmade voodoo drums (minnan tanbou, sogon tanbou, and bata) and a Roland Octapad. The intricate syncopations lock into a hypnotic groove, while the guitar adds psychedelic shimmer. But all eyes are on Lunise, her face an expressionless mask beneath a blond wig as she delivers the Creole lyrics with icy intensity tinged by ineffable sadness. It's a riveting performance, and the audience members, many in costume, dance wildly in front of the stage.

Richard Morse and his band RAM cast a spell of voodoo rock

Larry Birnbaum

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Then Morse steps out, a head taller and several shades lighter than anyone else in the band, and begins to sing in English. The voodoo rhythms and rock melodies make an unlikely but agreeable match, and the dancers never miss a step. Finally, the band kicks into a delirious "rara" beat for its 1997 carnival anthem, "Zanj" ("Angel"). "People sit down and eat with you," it goes, "and then they try to poison you." One by one, the musicians leave the stage and march slowly around the room, beating metal hoe blades and blowing foghorn blasts on brightly painted makeshift trumpets called "kanets." A couple of costumed dancers roll their eyes, throw their heads back, and fall into a trance, possessed by the spirits of ancient Africa.

The next morning Morse gets the news: A gang of thugs has demolished RAM's float, and the band is out of the Carnival competition. Reporters descend on the Hotel Oloffson, and Morse is all over the Haitian media—as is Charlemagne, who to universal disbelief denies any involvement. An electronic newsletter called the Sun of Justice "Brouillon" posts the story on the Internet under the stylistically misleading headline, "PORT-AU-PRINCE MAYOR SMASHES REGGAE BAND," pointing out the irony that, "during the military regime of 1991-1994, Charlemagne himself, who was then a protest singer, was arrested, tortured, badly beaten, and narrowly escaped death by fleeing overseas."

That evening, the first of three nightly carnival parades steps off without RAM, while Morse sits poolside at the Oloffson, watching the float's laser projector beam the band's logo onto neighboring buildings. Along the down-town parade route the streets are thronged with youths—mostly male, practically none in costume—who dance between the huge floats in snakelike lines, shoving aside anyone who gets in their way. Mounted on flatbed trucks, the floats inch ahead, each bearing a band blaring its carnival song over and over, while police club a path through the mob. It's like a marathon mosh pit.

Since the late '80s, the Port-au-Prince Carnival has been dominated by "roots" bands like Boukman Eksperyans, Boukan Ginou, Kanpech, Koudjay, and RAM, all combining rock and voodoo in various proportions. Before that, voodoo rhythms were hardly ever used in Haitian pop music, and the only bands on floats played compas, a slower cousin of the next-door Dominican merengue. Still Haiti's most popular dance beat, compas is represented at this year's Carnival by bands like Mizik Mizik and Digital Express, but there's also the new, reggae-flavored sound of youthful groups like King Posse, whose float draws some of the loudest cheers.

But no one can compete with Koudjay, whose song "Gran Manje" ("Big Eaters") is on everybody's lips. Like most Haitian protest songs, it's couched in ambiguous language—a "big eater" could be anyone getting rich at the expense of the country's impoverished majority—but it's generally perceived as an attack on the ruling Lavalas party of President Préval. "Bring the rope, so we can tie up the big eaters," Koudjay chants, as its members dangle nooses over the sides of their float. The crowd roars its approval: For the first time in its history, Haiti is a democracy, and now it's the elected officials who must answer for the disastrous state of the economy.

Once the jewel of the French Empire, Haiti is now the poorest country in the Western Hemisphere. Raw sewage streams through the potholed streets of Port-au-Prince; the air reeks of burning garbage. While there's no indigenous white population—the last remaining French colonists were massacred after independence was declared in 1804—a light-skinned minority still controls a disproportionate share of the nation's wealth. Although widely practiced, voodoo, a complex amalgam of traditional West African religions, was ruthlessly repressed by a succession of dictatorial governments. Even today, the capital's most common graffiti proclaims, "JESUS L'UNIQUE SOLUTION."

It was voodoo rhythms that drew the Connecticut-bred Richard Morse to Haiti. His father, a descendant of New England Puritans, was teaching at Columbia University in New York City when he met Emerante de Pradines, a Haitian dancer and anthropologist. They married in 1954, and Richard was born three years later in Puerto Rico, where his father briefly taught before moving on to Yale. "There weren't a lot of Anglo-Saxon Protestant Americans marrying Haitian voodoo singers back then," says Richard, "and I didn't realize I was of two races until someone said, 'Your mother is a nigger.' When I was a teenager I had to make a decision, and my decision was that I was going to deal with people on their moral character rather than their coloring."
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For Morse, racial and cultural confusion went hand in hand. "I grew up listening to the Rolling Stones and Sly & the Family Stone on the radio," he says. "Then I'd go to the dance school where my mom would teach folklore classes. My older brother would be playing voodoo rhythms on the drum, and she'd be teaching the suburban girls these Haitian folkloric dances. But they didn't say, 'These are voodoo rhythms.' They called it 'ethnic dance' or 'folklore,' so I didn't understand what was going on."

Morse attended Princeton University, where he bought an electric bass his senior year and, under the name Rich "Luxurious" Lather, joined the new-wave rock band Groceries. The group worked the Jersey shore and played New York clubs like CBGB's and Max's Kansas City, occasionally opening for bands like Bow Wow Wow and Gang of Four. Morse began singing and writing songs, including several that later found their way into RAM's repertoire. But in 1974, after Groceries had recorded an album and an EP, he was kicked out of the band.

By then Morse had made his first visit to Haiti, and in 1985 he returned for good, bringing along his bass, a drum machine, and a four-track tape recorder. "The new-wave scene started going towards world music," he says, "and I went to Haiti to record rhythms and write songs. At first I thought I was going to program the rhythms on a drum machine. Four months later, the country's notorious dictator, Jean-Claude "Baby Doc" Duvalier, was overthrown. "People started shooting," says Morse, "and that created a lot of confusion. My mom had a house in the mountains, and I went up there, and you could hear the machine-gun fire echoing up the valley. It was all pretty strange, but I realized I needed a job, and that's how I got into the hotel business."

The Oloffson, run by a Norwegian couple, had closed during the political upheaval, and Morse reopened it in 1987. The Victorian gingerbread mansion has hosted such luminaries as Mick Jagger, Lauren Bacall, Ali McGraw, Lillian Hellman, Harold Pinter, Irving Stone, John Gielgud, and Barry Goldwater; it served as the model for cartoonist Charles Addams' haunted houses, the studio for ethnomusicologist Harold Courlander's field recordings, and the setting for

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**The Short, Lively History of Haitian Music**

Haiti is one of the greatest repositories of African rhythm in the Americas, rivaling Cuba and Brazil, but its music has received little international exposure. One reason is that, until recently, traditional voodoo rhythms have had little media exposure in Haiti itself. The Haitian revolution may have been ignited by a voodoo priest named Boukman, but the ultimate victors modeled the country after Napoleonic France, with French as its official language and Catholicism its official religion. Yet though the urban middle and upper classes—at least on the surface—adopted European ways, the poor and rural majority clung to the culture of their African ancestors.

Until the 1950s, Haitian pop music was mostly borrowed from Europe, the US, and other parts of the Caribbean. But under the notorious dictatorship of François "Papa Doc" Duvalier, band leaders Nemours Jean-Baptiste and Webert Sicot came up with their own original beats, compas and cadence, while the group Jazz de Jeunes favored Cuban and Dominican rhythms with a mild dose of voodoo. The Duvalierists preferred compas, so Jazz de Jeunes was driven into exile, and Sicot died in obscurity.

In the '60s the compas format shifted from brassy big bands to electrified "mini-jazz" guitar groups like Shleu-Shleu and Shakh-Shakh #1; in the '70s bands like Tabou Combo and Magnum Band added funk and rock elements, and in the '80s "new generation" groups like Zin and the Phantoms incorporated zouk music from Guadeloupe and Martinique. Today "ragga" bands like King Posse and Original Rap Staff blend compas with dance-hall reggae and hip-hop.

Besides compas, Haitian pop embraces the Brazilian-like stylings of Beethova Ohas and the troubadour crooning of Manno Charlemagne. There's Haitian soul, jazz, rap, and house music, everything from old-fashioned merengue to the predecessor of compas—to the latest electronics. But though Tabou Combo toured Europe and pop diva Emeline Michel released albums in Japan, the only Haitian genre to have had much of a worldwide impact has been the voodoo-rock of bands like Boukman Eksperyans, who put Haitian roots music on the map in 1991 with its Grammy-nominated debut album, 

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_Virtually all voodoo rock has political overtones, but Boukman's music remains the most committed. "The roots bring something else that the people need—the revolutionary message," say Boukman's leader, Lolo Beaubrun. "I think it's one of the music's after reggae's coming up with a strong message. A concert of Boukman is a ceremony also. We talk with the people spiritually about what is going on, what we feel about things. The people feel that it's their concert also, and it's important for us to have that communication. During the military government it was hard to have that communication, but we did it anyway."

After three CDs for Mango, Boukman plans to release its next album on its own label, including a remixed version of its 1997 Carnival song "Ti Pa Ti Pa," which inveighs against the privatization program thrust upon Haiti by the International Monetary Fund and the World Bank. "We're not going to accept that," says Beaubrun. "There is a Haitian proverb, 'One finger cannot eat gumbo.' It means you have to live and work together. We invite people to return to their lakou, their cooperative, and work together. Haiti is divided in two. When the peasants came to the city, they called them outsiders—people outside civilization, outside modernity. Now we try to build a bridge between the two communities, but it's really difficult."

There are now hundreds of roots bands throughout Haiti and the emigrant communities of North America; there's even an all-Swedish voodoo band, Simbi, formed by a Creole-speaking former exchange student. Few have recorded, but Boukan Ginen, Kanpech, Koudjay, Zobop, Rara Machine, Simbi, and RAM all have CDs that are more or less available in the US. There are also a number of albums of voodoo ceremonial music, including the new CD/book package _Angels in the Mirror: Haitian Vodou Music on Ellipsis Arts_. But the Haitian music industry continues to be plagued by problems of chronic poverty, disorganization, and corruption, as well as by lingering "black magic" stereotypes. It remains to be seen whether these formidable obstacles can be overcome, and whether Haiti's vast cultural treasures will ever come fully to light.

_Larry Birnbaum_
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Graham Greene's novel *The Comedians*. Under Morse's management it became a hangout for journalists and filmmakers, and the launching pad for the Haitian roots-music movement.

Voodoo music had been confined to religious ceremonies, using only voices and percussion, but in the ’80s a cadre of musical revolutionaries jumped off the *compas* bandwagon and began to integrate ritual chants and beats with rock, reggae, R&B, and even jazz. Morse was impressed enough by a band named Boukman Eksperyans to install them as the house band at the Oloffson. “Boukman was completely unknown,” he says. “The first time they played at the hotel there were 12 people in the audience. I brought in radio and TV stations, and it took off.” Boukman went on to win the 1989 and 1990 Carnival competitions, a contract with Island Records, and worldwide fame.

In 1988 Morse began presenting a folkloric drum-and-dance troupe at the hotel; two years later he added guitarist Onito Parfait, bassist Jose Mondelus, and keyboardist Jean Emmanuel Marcelin, and RAM was born. “I was just trying to see if my songs would go with these rhythms,” says Morse. “There’s breaks and changes and bridges, so it took a while to figure out.” Morse was soon smitten by the troupe’s lead dancer. “Lunise wasn’t singing at first,” he says, “and then she started singing chorus. She just had a nice quality to her voice, and the public went crazy. She was a very natural dancer, and she’s a very natural singer.”

In early 1991 Haiti’s first democratically elected president, Jean-Bertrand Aristide, took office; by the end of the year he’d been ousted by a military junta. “Aristide really politicized the music,” says Morse. “He completely excluded the *compas* bands, and roots became the music of Aristide and the Lavals movement. And when he fell, the military really polarized it.”

Under Aristide, RAM scored its first hit, “Latbonit (Banging Drums),” although Morse sang it in English. “Only on the radio did it work,” he says. “People couldn’t understand the words, but they understood the rhythms. The live show didn’t take off till people realized it was dance music. When they thought it was voodoo and ceremonial, they didn’t come, but once they realized they could dance to it, that’s when they started coming.”

The following year RAM released its first album, *Aihebo* (Cave Wall 101 932-2). It includes the Lou Reed-ish “Ibo Lele (Dreams Come True),” which director Jonathan Demme, an Oloffson regular, featured on the mega-selling soundtrack of the movie *Philadelphia*. Despite the hostile coup, the song got heavy local airplay. “The military were trying to show the US embassy that they weren’t clamping down,” Morse explains, “so they tried to intimidate the radio and TV stations into self-censorship, but they let it go to a certain degree. They closed stations down for playing RAM in the provinces, but they tried to keep a semblance of normalcy in Port-au-Prince.”

The album’s sleeper turned out to be “Féy,” an old Haitian parable sung in Creole by Lunise, two lines of which — “I only have one son / They made him leave the country” — were widely interpreted as a reference to Aristide. Choked by a United Nations embargo, the government grew increasingly repressive, and “Féy” became the anthem of the opposition. Other roots bands stopped playing or left the country, but RAM performed “Féy” right up until the US invasion that restored democracy in 1994. “We were almost arrested,” says Morse. “There was a concert where they pulled the plug, turned out the lights, and everyone ran. Finally, they came to the Oloffson and dragged people out with Uzis. That was the last time we played, and the troops were in 10 days later.”

With the Haitian situation back to what passes for normal, RAM recently recorded its second album, *Patriot Voices*, for Jimmy Buffett’s Margaritaville label (162-531-103-2). [Soon to be distributed by Island Records, this disc is currently available by calling (800) CoCo-Tel or by visiting margaritaville.com. —Ed.] Buffet had been going to Haiti for 20 years and knew many Haitian musicians; he heard RAM at the New Orleans Jazz & Heritage Festival and met Morse through Jonathan Demme. “Richard gave me the first CD,” says Buffet, “and we started talking. It looked insane from a logical angle, but I said, ‘What the hell, why don’t we just try it?’ And then I brought them to the States last year to open for me to a 99.9% white audience of 42,000 people in Buckeye Lake, Ohio, and they loved them.

“Whether it’ll work out in the US, I don’t know, but the music business should be about taking risks, and it’s not anymore. I have no rational reason to take a band out of Haiti and record them in the middle of a record slump, but it doesn’t bother me as long as they’re willing to do the work. That’s what I like about them: a band surviving in Haiti knows about adversity. Sure, I’d like to see them make some money, but if they don’t, at least they’ve had a shot at it. I tell everybody, ‘Remember, they’re Haitian and they can throw a voodoo spell on you, so we gotta put the record out.’ It scares people, but I’ll do anything.”

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Stereophile, November 1997
The concept of a loudspeaker with its own built-in amplification is an idea whose time should long since have come. Technically it makes a lot of sense, and in some parts of the world—not to mention professional circles—it's quite popular. But commercially, the idea has never really taken off in this country. And while the loudspeaker manufacturer should be in a better position to make the best amplifer choice, American audiophiles seem wedded to the idea of making their own amplifer/loudspeaker match.

The current popularity of subwoofers, however, may have inadvertently sown the seeds that will change all that. It has given rise to an interesting and sensible hybrid: a one-piece loudspeaker whose woofer is separately powered from the rest of the system. The user provides the amplifier to drive the mid-range/tweeter portion of the loudspeaker. Such a system has a number of advantages. First, the woofer amplifier and driver can be tailored to each other. The power output of the amp can be designed to complement the power handling and sensitivity of the woofer, and low-frequency equalization can be used if needed. There is also the possibility (though not a guarantee) that such a direct connection to the driving amplifier will offer better control of the woofer's performance. Second, the woofer crossover frequency can be lower. A passive crossover at or below 100Hz—particularly the low-pass leg—has a number of serious technical liabilities.

Third, the bass characteristics and power output of the amplifier the user must furnish become less significant, allowing the user a potentially wider selection of candidates (but see more on this below). And, finally, the powered woofer allows for user adjustments—woofer level and perhaps contour—that are not feasible in a passive design.

Mirage is not the first company to come out with such a powered, self-contained subwoofer design, but this feature, significant as it is, is not the only attraction of their new OM-6 loudspeaker. This model also incorporates a number of concepts that Mirage has used successfully in earlier bipolar designs (some of which remain in production), and at least one new refinement on the bipolar principle.

Recall that both bipolar and dipolar loudspeakers radiate energy front and back. Bipolar loudspeakers (invariably designed around conventional dynamic loudspeaker drive-units) differ from dipolar designs (often, but not always, flat panel radiators) in that the front and back radiation are out of phase in a dipole, in phase in a bipolar (which means that the cones on both sides move away from the cabinet when presented with a positive voltage step). In a dipole, there is a deep null in the sound output at the sides of the enclosure due to cancellation of the opposing phase wavefronts. In a bipolar, the response dips at the sides due to the natural limits of driver dispersion at higher frequencies, but the front and back radiation do not cancel each other out.

The front and back radiation do not cancel each other out. If you could make a dipole cabinet as narrow and shallow as possible, the response dip at the sides would become less pronounced. Carried as far as is physically possible, the response would begin to resemble the omnidirectional design. (It can't be a true omni, of course, because the front and rear drivers, particularly the tweeters, do not have full 180° dispersion at all frequencies.) Mirage dubbed this design "Omnipolar," and the OM-6 is the first commercial realization of the concept.

The narrow front/shallow depth

Description: Three-way, floorstanding, sealed-box loudspeaker system with an integral powered woofer. Drive-units: two 1" (25mm) pure titanium hybrid tweeters, two 5.5" (140mm) mica-filled, injection-molded polypropylene-cone midranges with butyl surrounds, two 8" (200mm) long-throw, polypropylene-cone woofers. Woofer amplifier: 150W continuous, 600W peak. Crossover frequencies: 80Hz and 1.9kHz. Frequency range: 18Hz–22kHz (tolerance not specified). Sensitivity (in-room): 91dB. Impedance: 4 ohms nominal, 8 ohms minimum. Recommended amplifier power: 30–200Wpc (at less than 10% clipping).

Dimensions: 45.5" (1156mm) H by 9.75" (248mm) W by 16.5" (419mm) D. Weight: 61.5 lbs.

Serial numbers of units reviewed: 081198/081199.

Price: $5000/pair. Approximate number of dealers: 250.

aspect of the Omnipolar idea is immediately evident in the OM-6: Its upper portion is very thin. To accommodate the cabinet volume needed by the woofers, however, the bottom of the enclosure is much deeper, with a sloped top surface where the woofer controls are located (more on this below). The bi-wirable connections for the midranges and tweeters are on the lower rear panel, along with the connector for a detachable power cord for the subwoofer amplifier. The top and back of the woofer section are the only surfaces not covered in black grillecloth. A thin strip of black lacquered wood dividing the woofer and upper modules (which cannot be separated) and a removable gloss-black top complete the traditional Mirage look. But because of the OM-6’s unusual shape, any physical resemblance to Mirage’s bipolar designs ends here.

Three separate grille elements cover the front and sides of the subwoofer enclosure. All are removable, though the loudspeaker looks decidedly industrial without them. The top mid-tweeter module is covered in a grillecloth “sock” that can be slipped down to uncover the drive-units. But the system is not designed to be used with the grilles out of position, and the IDQ (Interior Design Quotient) with the sock down and the bottom grilles removed is probably less than zero. I did all of my listening with all of the grilles in place. In this configuration, the OM-6 is a very attractive package—though definitely unconventional.

All of the drivers in the OM-6 use Mirage’s latest technology, including the same titanium hybrid tweeter used in the company’s flagship M-1si loudspeaker. The upper module contains two midrange/tweeter arrays, one radiating toward the front, the other toward the back. To keep the cabinet as shallow as possible, the front and rear tweeters and midranges are mounted back to back; that is, while the front tweeter is mounted on top, the rear tweeter is mounted on the bottom, and vice versa for the midranges. The overall depth of the mid-tweeter module is just over 4 1/2.

The subwoofer amplifier turns on automatically when it senses an input signal. The “on” status is indicated by an LED at the lower front of the cabinet that is visible through the grillecloth when illuminated. Once on, the amplifier’s turn-off delay is long enough—even when the signal stops—that I never experienced any problems with on-off cycling.

The two 8” woofers are mounted on opposite sides of the lower, sealed cabinet, in the same bipolar arrangement used by Mirage in a number of their sep-

John Atkinson measured the Mirage OM-6 and provided me with the results after my listening tests were completed.

The Mirage’s sensitivity measured 82dB-W/m (B-weighted). The impedance of the unpowered midrange/tweeter module is shown in fig.1. The mid/tweeter section is tuned to 112Hz. The rise in the impedance magnitude below 80Hz is typical of a system with a series capacitor. The latter is undoubtedly designed to prevent overdriving the mid-tweeter module with low bass, as there is no other high-pass filter in the circuit (unless the user adds one, as discussed earlier). The small ripple visible at 22kHz is the ultrasonic tweeter resonance; another small resonance indicating ripple is visible at about 280Hz. The minimum impedance is 3.8 ohms at 350Hz, and the phase characteristics are relatively benign. The OM-6 should not be an especially difficult load for any well-designed amplifier.

Fig.2 (top curve) shows the FFT-derived frequency response of the OM-6’s midranges and tweeters taken on the high-frequency axis, combined with the nearfield responses of the two powered woofers, set to “+3” and “0.” Note that with the LF equalization set to +3 (where it remained for much of my listening), there is less output below 37Hz than with the control set to flat. The midrange response here is unusually smooth, with the small, visible midrange modes above the crossover point (about 2kHz) well suppressed by the crossover.

Fig.3 is the combined response of the mid/tweeter module averaged across a 30° lateral window, combined with the complex sum of the nearfield bass and midrange responses. For this measurement, the bass equalization was set to zero. The excellent overall bass extension is still strong at 20Hz—true subwoofer territory. The slight crossover suckout visible at about 75Hz should be insignificant once the room response kicks in. The dip in the low to mid-treble (from about 2kHz to 7kHz) would definitely explain the forgiving quality of the Mirage’s sound. But the response bumps just above 1kHz and above 10kHz are counterbalanced somewhat by dips in the OM-6’s off-axis response in these regions (see below). Therefore, the subjective effect of the latter deviations—one of which

![Fig.1 Mirage OM-6, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).](image1)

![Fig.2 Mirage OM-6, anechoic responses on tweeter axis at 50° of tweeter, and midrange unit with nearfield midrange and woofer responses plotted below 500Hz. Top woofer response is with the unit set to “+3,” bottom set to “0.”](image2)

![Fig.3 Mirage OM-6, anechoic response on tweeter axis at 50°, averaged across 30° horizontal window and corrected for microphone response, with the complex sum of midrange and woofer responses plotted below 300Hz (top). Anechoic response on rear midrange axis at 50°, corrected for microphone response and offset by -5dB for clarity (bottom).](image3)
arate subwoofers. This bipolar arrangement is said to minimize cabinet vibrations by cancellation: the movement of the woofer on one side is counterbalanced by the equal and opposite motion of the woofer on the other side. This will definitely reduce the tendency of the woofers to "rock" the cabinet, but I suspect the general complexity of the vibration modes makes cancellation of cabinet vibrations themselves considerably less than perfect. (There's no dispersion advantage in mounting the subwoofer drivers in this fashion, as each driver is largely omnidirectional below its fixed crossover frequency of 80Hz.)

At the top of the subwoofer cabinet is a line-level input to the subwoofer amplifier, a two-position phase control (zero or 180°), and controls for both subwoofer level and contour. The latter provides for a moderate degree of LF cut or boost, specified to peak at +3dB at 45Hz. There are two ways the subwoofer may be driven: directly at line-level via an additional interconnect from the preamp, perhaps using a Y-connector, or by tapping the drive signal for the subwoofer from the system's speaker-level input. (The latter mode is engaged via a third position on the upper-panel phase switch.) Loudspeaker-level drive might be more convenient for some, or even necessary for those with integrated amplifiers and no line outputs. I used the line connection, however, for all of my listening. (The output of my Rowland Consummate preamplifier has both normal and reverse-phase unbalanced outputs; I used its reverse-phase outputs to drive the OM-6 subwoofers, placing the latter's phase switch at 180° to make the overall combination effective positive phase.)

One caveat about the choice of amplifiers: Though it may be tempting to consider the use of a low-power amp to drive the mid/tweeter section of the loudspeaker, remember that this amplifier is always being driven full-range. It is thus still subject to clipping from strong low-frequency signals, even if these signals do not reach the OM-6's mid/tweeter-range drivers. The only way to avoid this is to roll off the upper-range amplifier's bass response. This may be done with anything from an onboard electronic crossover (only the high-pass section is required) to a high-quality capacitor of the appropriate size at the input of the amplifier.

The proper choice of crossover point and technique to use here is beyond the scope of this review. If you do perform some sort of high-pass filtering at the front of the mid/tweeter amplifier, then you must use the line-level connection to the subwoofer. (There will be no deep bass present at the loudspeaker's tweeter taps.)

is severe — will depend to a large extent on the room and positioning of the loudspeaker. The Mirage did not sound overly forward in the midrange or peaky in the high end in my room. The slight rise at 9-10kHz might explain the slight graininess or dryness I noted on top, but the operative word here for both the measured rise and its subjective impact is "slight."

The bottom curve in Fig.3, displaced by 5dB for clarity, was taken at a horizontal off-axis position of 180°, i.e., from behind the speaker. Note the comb filtering beginning in the low treble. This is likely due in large measure to reflections of the loudspeaker's rear radiation from the top of the woofer cabinet. The subjective effect of these "picket-fence ripples" — typical of comb filtering, and here spaced so close together that they're unlikely to be heard as individual peaks and dips — might well be heard as added airiness and spaciousness rather than rough or uneven response. Still, the suckout at 550Hz might somewhat reduce the sound's overall presence.

Fig.4 shows the OM-6's vertical response family, plotted relative to the on-axis response. (The latter is normalized to flat, with the remaining curves showing the changes as the listener moves off-axis.) This is good performance, a vertical listening position 5-10° below the tweeter axis being about optimum. Since the tweeter axis...
With any amplifier of sufficient power, however—certainly anything above 100Wpc—audible clipping should not be a concern in normal use.

Setup
Largely because of its adjustable bass, setup of the Mirage OM-6 was far easier than with most normal loudspeakers. I obtained good results from two room configurations: firing across a room diagonal, or placed several feet out from and parallel with the short wall. Most of the comments in this review reflect the latter setup.

In both situations, the Mirages were placed well out from the wall behind them and toed-in toward the main listening position. Using a variety of program material, I set the bass level and equalization for best results. (The optimum settings will vary from room to room and position to position.) Male vocals proved particularly useful in making these adjustments. I used the furnished spikes; these included two attractive gold-plated feet that double as locking collars for the front spikes.

Listening
From the first audition, the OM-6's easy-on-the-ears, well-balanced, full-range sound made the right impression. The OM-6 is not time-coherent, the midrange delayed just under 1ms behind the tweeter. The slight jog in the response curve at about 5ms is likely the delayed response of the rear midrange driver.

The OM-6's cumulative spectral-decay or "waterfall" plot is shown in fig.8. The response here is very clean, with little or no hash, and a mere hint of what could be a delayed mode from the midrange units at just under 10kHz.

Altogether, there is little to criticize in this set of results, which go a long way toward explaining the impressive performance of the OM-6 in the listening room.

—Thomas J. Norton

**Fig.6** Mirage OM-6, impulse response on tweeter axis at 50° (5ms time window, 30kHz bandwidth).

**Fig.7** Mirage OM-6, step response on tweeter axis at 50° (5ms time window, 30kHz bandwidth).

**Fig.8** Mirage OM-6, cumulative spectral-decay plot at 50° (0.15ms risetime).
woofers helped significantly to minimize any chestiness or boom on male vocals.

In fact, it was male vocals that I used to adjust the controls on the OM-6, falling back particularly on two old reliable references: Gordon Lightfoot's If You Could Read My Mind (Reprise 62922-2) and the Fairfield Four's Standing in the Safety Zone (Warner Bros. 26945-2). In my experience, when the balance is right, the former should have just a small degree of pleasing warmth, the latter just a little more (though not to excess). The surprisingly narrow range of the Mirage's controls at which these conditions were met is food for thought when you consider how seldom normal loudspeakers can be made to sound right through the mid bass—not without careful, often tedious setup. And some loudspeakers refuse to fall into balance no matter what the user does—often for no other reason than a skewed top/bottom balance. I would certainly not claim that the Mirages can be made to sound optimum in every possible room, but their inherent flexibility greatly enhances their chances for success.

At the top, the OM-6 was open and detailed. There was a touch of fine grain present with both test amplifiers, though it was lessened with the Kinergetics. This suggests a slight rise in the Mirage's response in the highest region or slightly above. It may possibly be related, also, to its wide dispersion, which put more overall upper octave energy into the room than typical direct-radiating loudspeakers. But I never found this quality irritating. The only downside was a small loss in the liquidity and sweetness of the upper treble. The upside was an open, detailed, but never etched or exaggerated sound—in other words, a convincing window on the recording itself.

The radiation pattern of the OM-6es enhanced this open quality—the sound was suspended in space around and between the loudspeakers. And unlike many loudspeakers that radiate in multiple directions, with the Mirages I never felt that I was listening to the ambience of my listening space rather than the ambience of the original recorded event. Still, this quality will certainly be dependent to a degree on your room and setup.

While the OM-6es were relatively easy to set up, I don't recommend positioning them so that their rear radiation fires into undamped room corners. Even if they're physically well out from the corners, this placement invites an unnaturally cavernous midrange coloration. (My listening room is not overly live, and the front wall behind the loudspeakers is damped from the outside of the loudspeakers into the corners.)

Soundstage placement with the OM-6es, while less pinpoint than you might get with, say, good minimonitors, was nonetheless natural. Depth was very convincing and, again, appeared to be that of the recording rather than a byproduct of the loudspeaker's radiation pattern. The dancer on Flamenco (Philips 422 069-2), for example, generated an astonishing sense of position, both in width and depth, as he worked his way around the "stage" in front of me.

Another engaging characteristic of the OM-6es' radiation pattern was the stability of the image as I moved laterally across the listening area. This does not mean that you'll get optimum imaging no matter where you sit—I know of no loudspeaker that will do this trick. Any loudspeaker capable of reasonably precise imaging will still work best from the sweet spot, and the OM-6 was no exception. But still, I got a believable image from any reasonable listening position. Furthermore, I heard no odd, abrupt shifts in balance and soundstaging as I moved across the room.

With many loudspeakers, such shifts are the inevitable result of the loudspeakers' limited horizontal radiation pattern, their response irregularities, and the room. It's not unusual for the sonic effect to resemble a sort of comb-filtering, with the images shifting radically, sometimes popping into focus, at other times sounding phasey and indistinct as you move farther from the primary listening position.

With the OM-6es I was conscious of no such irregularities. With the loudspeakers toed-in toward the center I could, in fact, sit opposite the left loudspeaker and still hear a respectable soundstage spread evenly from left to right. This has useful implications for any application in which the loudspeakers must provide satisfying performance to a widely spread group of listeners—it, home theater.

The OM-6's bass response was remarkable for a loudspeaker of this size. It definitely extended into the bottom octave, and while a few each of the best subwoofers and full-range loudspeakers offer more powerful sub-30Hz performance, you'll have to look hard to find them. On a wide variety of bass material—bowed and plucked double bass, bass
"What Price Best Sound?"

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Drum, organ, piano, synthesizer, even video-type sound effects — the result was never less than convincing, and frequently thrilling. The famous falling drumset on Dafos (Reference Recordings RR-12CD, now available only on a reissue from Ryko) definitely sounded as if it was coming from a subwoofer rather than merely a good woofer. This is a subtle distinction; a good subwoofer energizes the room in a way most ordinary woofers can't quite manage. The percussion section on Vaughan Williams' Sinfonia Antartica (Koss Classics KC-2214) startled me upright. And Jean Guillou's organ transcription of Mussorgsky's Pictures at an Exhibition (Dorian DOR-90117) rocked the room.

Still, though the overall bass of the OM-6 was impressive, it wasn't quite awesome — there's still room for improvement in definition and power handling. While what I heard in the low end was often amazing, we're still talking here about 8" drivers pushed to their limits. The bottom octaves were a little full and rich rather than tight and highly detailed, and there was occasional audible overhang (possibly a result of bass amplifier clipping) when I worked the system hard. Push it just a little harder and the woofers began to rattle on extremely challenging material like the big bass drum on "O Vazio" from Tropic Affair (Reference Recordings RR-31CD), deep synthesizer bass such as that on "Psychopomp" from the Dafos CD, the subterranean growl in "Hell's Bells" from The Apocalypse Now Sessions (Rykodisc RCD 10109), and video sound effects such as the falling rock in the cave sequence from the Aladdin Laserdisc.

Unlike with most loudspeakers, you do have the option here of turning down the bass level without sacrificing overall system loudness: Apart from the bass limitations noted, the OM-6 played very loud without turning edgy or being seriously congested. Turning down the woofer level slightly thinned out the overall balance, yet also minimized bass overloading. But it's also fair to point out that this is unlikely to be a problem in a smaller space than my fairly large listening room, or at less demanding overall playback levels.

I've already mentioned the slightly laid-back, forgiving quality of the OM-6. This is a strength in that the Mirages were far less likely than most loudspeakers to sound irritating on less than the best program material, a weakness in that they sometimes just didn't "take off" dynamically when the music called for it. They seemed just a little lacking in "jump factor" — the ability to startle with abrupt shifts in the microdynamics of the music. (This is opposed to their output capability, which, as I've noted above, was more than adequate.) I attribute this at least partially to their radiation pattern, though I also suspect a slightly recessed response either in the midrange or low treble — perhaps both.

But the OM-6 was both involving and detailed through the midband, which suggests that the recessed response (if it in fact exists) is not severe. In both bass power-handling and dynamic immediacy, the OM-6 was outdone by my long-term reference, the Energy Veritas v2.8, though the latter loudspeaker lacks the Mirage's adjustable and is therefore more difficult to position for optimum bass performance. But the comparison is hardly fair; the Energy sells for twice the price of the Mirage. There is, I suspect, a larger Omnipolar model in the Mirage pipeline which will give the big Energys a run for their (and your) money.

Conclusions

Minor quibbles aside, the overall performance of the Mirage OM-6 was hard to fault. I know of few loudspeakers that can match its extended frequency response, output capability, sheer listenability, and low coloration. Thanks to its separately adjustable subwoofer, it is relatively easy to position and not overly demanding of associated components. Its ability to maintain reasonable performance with less than the most pristine program material and in less than optimum listener locations strongly suggest that it just might be at home in an all-purpose, music/home-theater system without the musical compromises that such a multi-use system sometimes involves. In fact, I plan to try it out in just such a system for a possible review in the Stereophile Guide to Home Theater.

In short, you don't need a crystal ball to figure out that I really like the Mirage OM-6. I suspect that you, too, just might be impressed.
Paradigm Reference Active/20 powered loudspeaker

John Atkinson

There are many benefits accruing to a loudspeaker when its designer goes the active or powered route. The usual losses and distortions associated with passive crossovers can be circumvented, while the fact that the amplifiers and drive-units can be designed as a package enables the designer to squeeze more performance from each than would otherwise be the case. And the savings gained from the absence of a separate amplifier chassis can be passed on to the consumer.

Yet with the exception of some domestic models from Meridian, Genelec, and Mackie, and powered subwoofers from many home-theater manufacturers, active speakers have not caught on big with audiophiles. I suspect it’s an issue of choice: buy an active speaker and you’re denied the freedom to select an amplifier from a favorite manufacturer. And when you do active, your existing amplifier metamorphoses into a costly boat anchor.

Nevertheless, brave manufacturers continue to introduce powered speakers. I first heard the subject of this review, Paradigm’s diminutive Reference Active/20, at the 1997 Winter Consumer Electronics Show, and was sufficiently impressed by what I heard to request a pair of review samples.

**Description:** Two-way, reflex-loaded, stand-mounted, powered loudspeaker. Inputs: one unbalanced line-level (RCA), one balanced line-level (XLR). Controls: Speaker Level, High-Frequency Contour, Low-Frequency Contour, switchable High-Pass Filter for use with a subwoofer. Supplied accessories: two 12" AC cables, two 23' RCA-terminated, unbalanced interconnects. Drive-units: 1" (25mm) aluminum-dome tweeter; 6" (150mm) mica polypropylene cone woofer. Crossover frequency: 1.5kHz. Crossover slopes: third-order, 18dB/octave. Frequency response: 35Hz-22kHz, ±3dB (±1dB over most of the audio band). Amplifier power: 110W (woofer), 50W (tweeter).

**Dimensions:** 14" (356mm) H by 8.25" (210mm) W by 12" (300mm) D (including heatsink fins and AC connector). Weight: 27 lbs/pair (12.3 kg/pair).

**Finish available:** gloss cherry or black ash laminate.

**Serial numbers of units reviewed:** 10059/60.

**Price:** $1600/pair (matching 25" Premier stands cost $179/pair). Approximate number of dealers: 250.

**Manufacturer:** Paradigm Electronics Inc., 101 Hanlan Road, Woodbridge, Ontario, Canada L4L 3P5. Tel: (905) 850-2889. Fax: (905) 850-2960. US distributor: AudioStream, Div. of Bevan Corp., M.P.O. Box 2410, Niagara Falls, NY 14302. Tel: (905) 632-0180. Fax: (905) 632-0183. Website: http://www.paradigm.ca.

**Going active**

Minimonitor-sized, the two-way Active/20 features Paradigm’s usual 1" aluminum-dome tweeter coupled to a mica polypropylene cone woofer of nominal 6" size (the yellow, partially see-through cone is just over 5" in diameter). The woofer features an inverted-roll surround and is built on a die-cast chassis. This has flanges to its side that mate with the substantial frame of the grille to give a smooth, obstruction-free acoustic environment for the drivers.

The woofer is reflex-loaded with a large port on the speaker’s rear. This port is 9" deep and 2" in diameter, and is flared on both ends to reduce turbulence at high levels.

Clues to the speaker’s active nature are the green, LED-illuminated Paradigm logo under the woofer on the grille, and the large array of vertical heatsink fins on the top half of the rear panel. Three rotary controls beneath the heatsink control Level and High- and Low-Frequency Contour, while signal input is switchable between single-ended (RCA) and balanced (XLR). Another switch engages a high-pass filter, for use with systems including a subwoofer.

The Active/20 can be set to be on all the time, or only when it detects an audio signal. I used the latter setting, as the time constant seems sensibly set. The speaker stays on long enough without signal that you have time to change a CD, or go to the kitchen for another beer. (Some active speakers turn off far too quickly, I have found.) The woofer is driven by a 110W amplifier, the tweeter by a 50W amplifier. While this power

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**Paradigm Reference Active/20 loudspeaker**

**Stereophile, November 1997**
ratio may seem sensible on a typical music program, my experience has been that, for wide-bandwidth signals, the tweeter needs to see as much voltage swing as the woofer. However, Paradigm may well have been sensible in setting the HF unit's power conservatively.

**Let's rock**

It took me a while to find the optimum place for the Paradigms in my room. Positioned where the PSB Stratus Gold is had performed so well for last month's review (October '97, p.199), the Active/20s produced too much upper bass, the balance sounding unacceptably thick. Suspecting a coincidence between the distance of the woofers from the wall behind them and from the floor with the speakers sitting on the 25" AudioStream stands, I moved the Paradigms out in stages, eventually they ended up about 45° from the wall. In this position, the upper-bass transition sounded smooth and even. I left the speakers in this position for the rest of the review period.

My first impressions were very positive. With the tone controls set to their center, detented positions, a laid-back mid-treble was coupled with a slightly mellow top octave, an uncolored mid-range, and what sounded like an astonishing amount of bass for such a small speaker. True, it was really midbass, but the speaker appeared to give full measure down to 40Hz, with a useful amount of 32Hz audible. Below that, however, nada. The in-room output dropped like a stone, implying a high-order rolloff of some kind.

Low-frequency definition was okay. The speaker didn't boom, but neither was it the tight-as-a-nut, bottom-falling-out-of-your-world kind of bass that, say, the $15,000/pair Eggelston Works Anura routinely serves up. But it was good enough that extreme levels of ultra-bass, like the ridiculous B-string thundering on Dread Zeppelin's 1991, 5,000,000 (IRS X2 13092), caused my feet to start dancing.

So where's the catch? You don't get something for nothing, and we're talking about a pair of tiny'woofers. The catch is that the speakers won't give the listener high levels of low frequencies for long.

**Measurements**

Even with its level control set to the central detented position, the Paradigm Active/20 didn't require much drive to go quite loud. With a 1kHz, 1/2-octave warble tone, 200mV (balanced) was enough to raise an estimated 95dB at 1m. It's hard to conceive of a combination of source components that wouldn't accommodate this speaker. The protection seems quite complex: while 470mV (unbalanced) of the white-spectrum MLS noise was enough to turn on the red warning LED, the indicator remained green when the speaker was driven with more than 1V of 1kHz sinewave.

The 6" woofer is rolled off faster than would be the case with a simple reflex system. Fig.1 shows the nearfield responses of the woofer and the port, together with their complex sum. Both woofer and port roll out with a fourth-order, 24dB/octave slope, while their combined response approaches 27dB/octave. The small woofer is therefore protected from infrasonic overload. The measured response appears to be 6dB down at 35Hz, which is a low frequency for a minimonitor—1 assume that some equalization is at work here. The reflex port covers the 30Hz-60Hz octave, but note that its output peaks up again at 800Hz. This is presumably due to some kind of pipe resonance; fortunately, the port opens on the speaker's rear, meaning that the subjective effect of this peak will probably be negligible.

To the left of fig.2 is shown the Reference Active/20's bass response with the Low-Frequency Contour set to its maximum and minimum positions: the effect is to move the speaker's -6dB point between 40Hz and 32Hz. The third trace to the left of fig.2 is the low-frequency response with the High-Pass Filter switched into circuit: -3dB at 67Hz. This will allow the Paradigms to be matched with a subwoofer.

Moving higher in frequency in fig.2, the Active/20 features a very smooth response on the tweeter axis, with perhaps a slightly recessed output in the mid-treble. Certainly this is how it sounded in the listening room. The output returns above the 0dB line above 18kHz, but this should not present any subjective problems. This curve was taken with the grille on. Removing the grille results in a response peak almost 5dB high just below 4kHz (fig.3), presumably because the tweeter no longer sees a clean, nonobstructive acoustic environment. Do not listen to this speaker with its grille removed. The curve in fig.2 was also taken with the High-Frequency Contour control set to its middle, detented position. Fig.4 shows the effect of the control set to its

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**Fig.1** Paradigm Active/20, LF Contour set to "0," nearfield responses of woofer and port responses plotted below 1kHz, with the complex sum of port and woofer responses (top at 70Hz).

**Fig.2** Paradigm Active/20 with grille in place, anechoic response on tweeter axis at 50°, averaged across 30° horizontal window and corrected for microphone response, with the complex sum of midrange and woofer responses plotted below 300Hz with (L-R): LF Contour set to "4dB," "-4dB," and "0" with the High-Pass Filter engaged.

**Fig.3** Paradigm Active/20, effect on anechoic response of removing grille (5dB/vertical div.).
Other writers have mentioned the Active/20's seemingly endless dynamics. Sad to say, I didn't find that to be the case. Even with the Low Frequency Contour set to "0," I found that inclining the volume control to party-approved levels was a sure-fire way to end up with silence emanating from the Paradigms.

Tom Norton's recent acquisition of the Purple Rain DVD reminded me that the movie's soundtrack CD (Warner Bros. 25110-2) hadn't been played since Atkinson for a long time. Not counting a long car trip with classical pianist Hyperion Knight last January, when we found we both loved The Artist Formely Known As... 's music, I hadn't listened to the recording since I destroyed a Mission integrated amplifier with the LP version back in '87. Of course, I'm 10 years older now, and it doesn't become a middle-aged boomer to rock out in quite the same way as he did in his relative youth. Nevertheless, into my hands went my favorite air guitar, onto the CD player went "When Doves Cry," and with a look at the SPL meter to ensure I wasn't endangering my hearing too much, I hit it. Prince and I did five minutes at about 95 dB, with the green Paradigm logos occasionally flashing red. Then we all went quiet. The speaker's heartsink were hot—it took about 30 minutes for the speakers to reactivate. This was obviously unfair and unusual treatment, so I followed Purple Rain with the Ashkenazy-conducted Rachmaninoff Symphony 1 with the Concertgebouw Orchestra from the early '80s (London 411 657-2). And about 30 minutes later, in the last movement's big tune, one of the speakers went quiet again. Okay, I was playing the music loud. But this time the red lights weren't flashing, and I wasn't aware of any obviously audible strain on the speakers' part. Santa Fe's 7000' altitude knocks 3—4 dB off a speaker's sensitivity, so it's possible that I wouldn't have had any music-loss problems at sea level, but it does underline the fact that Paradigm is squeezing all they can from the Active/20's drive-units.

And maybe I'm making too much of this. After the review was written, I dug out Don Henley's Building the Perfect Beast (Geffen 24026-2)—I wanted to maximum and minimum positions. (For clarity, the on-axis response has been subtracted from both of these curves.) The control can be seen to shelf the speaker's treble above 3 kHz up or down by approximately 2 dB.

Fig.5 reveals the Paradigm's vertical dispersion. A crossover nullout appears more than 10° above the tweeter axis, suggesting that tall stands work best. The Premier stands supplied by Paradigm for this review are 25' tall including the spikes, bringing the speakers' tweeters level with my ears, which was optimal. Horizontally (fig.6), the use of a small woofer results in superbly controlled dispersion, something that always correlates with good imaging, as I found in my auditioning. (The grille was left on for all of these measurements.) The spatially averaged response taken in my listening room (fig.7) was the flattest I have measured. Once above the room-interaction region, and with the exception of a minor peak at 4kHz, the output between 400Hz and 6.3kHz met astonishing ±0.9 dB limits. No wonder the speaker sounded so neutral! And the useful bass response can be seen to extend down to the 32Hz band. I measure both speakers to derive this graph, by the way, the pair-matching at the listening position

Fig.5 Paradigm Active/20, vertical response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 10°-5° above-axis; reference response; differences in response 5°-15° below-axis.

Fig.6 Paradigm Active 20, horizontal response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 90°-5° off-axis; reference response; differences in response 5°-90° off-axis.
take advantage of the Paradigm's bass extension to dig the intermodulation-induced octave doubling on Danny Kortchmar's nary guitar intro to "All She Wants To Do Is Dance." The splimeter was peaking at 97dB, the red lights were flashing in time to the music, but the speakers kept on playing to the end of the track. I suspect that the protection is program-dependent; some kinds of music hit just the right spectra to push the Paradigms over the edge.

When I kept within the speed limit, the Paradigms continued to impress me with how well they reproduced music's broad sweep, something that was reinforced by their excellent stereo imaging. Excellent, that is, both in terms of image stability and in the way the speakers defined spatial positions in both the width and depth planes. I was editing and mixing Stereophile's live recordings from the 1997 Santa Fe Chamber Music Festival during the review period, and was continually impressed with how easily I could hear slight differences in soundstaging resulting from the choices I was making. And on commercial recordings, the Paradigms' ability to present fine detail without blending it into a generic sound was refreshing.

A cut that has been spending a lot of time in the Levinson CD player is Crosby, Stills & Nash's "Southern Cross" from 1982, as reissued on the 1991 CSN boxed set (Atlantic 82319-2). The song's verse rocks from A to G to D, Stills' arrangement making the most of the tape accelerometer to the cabinet sidewall and calculating a waterfall plot from its output (fig.10) revealed a small amount of panel resonant behavior, with one mode present just above 200Hz and another at 400Hz. The levels are low, however, and I noticed no congestion in this region.

Summing up, this is superbly measured performance for an affordable speaker. There is obviously some superb-speaker-engineering talent in residence at Paradigm.

—John Atkinson
A system and Setup

After some experimentation, I placed the active Paradigms about 45° from my listening room's rear wall (which is faced with books and LPs) and approximately 60° from the side walls (which also have bookshelves covering some of their surfaces). The three cylindrical pillars of each of the matching 25" AudioStream stands were filled to the brim with a mixture of lead shot and dry sand. Digital source was a Mark Levinson No.30.5 HDCD®D/A processor driven by a Mark Levinson No.31.5 transport via an Illuminati AES/EBU cable, or by a Panasonic SV-3700 DAT recorder via Madrigal AES/EBU cables and a Meridian 518 jitter-reduction unit. A Mod Squad Phono Drive EPS was used to amplify LP signals from a LinnSondek/Cirrus/Trampolin/Lingo/Ekos/Arkiv setup on an ArchiDee table. The preamplifier was the new Mark Levinson No.3805.

Other than for the phono preamp, the interconnects used were all balanced: first AudioQuest's AudioTruth Lapis X3, then Madrigal's CZ Gel-I. All source components and preamps used in my listening room were plugged into a Power Wedge 116 Mk.II, itself plugged into a dedicated AC circuit and fitted with the Power Enhancer option. The Paradigm speakers were plugged into the wall. The speakers were broken in by being placed face to face and driven out-of-phase with the "Special Burn-In Noise" track on Stereophile's Test CD3.

### John Atkinson

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At the end of the auditioning I went back to my long-term references, the B&W Silver Signatures driven by Mark Levinson No.33H monoblocks. As good as I felt the Paradigms to be, it was no contest. The B&W's sounded more refined, more detailed, with a considerably greater sense of ease. Only in bass extension and stereo imaging accuracy and stability did the Canadian speakers rival the British. But wait a second—the Paradigms, which include amplification, cost under $2000 with stands; the $8000/pair B&W's were being driven by $20,000 worth of Levinson. You'd better expect $28,000 to buy better sound quality than $2000! With speakers like the Paradigm Active/20 around, the Law of Diminishing Returns kicks in in a big way.

### Conclusion

Even if you have to spend a couple of hundred dollars on a pair of appropriate stands—and the supplied Premiers are a good choice—Paradigm's Reference Active/20 is a superb-sounding, well-engineered bargain when you consider that, for your $1600, you get everything you need to make sound other than a preamplifier and source components. Enthusiastically recommended as the affordable reference for minimonitor sound quality. Maybe I'll borrow another pair to experiment with surround sound...

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Harry Pearson
The Absolute Sound Magazine
Issue 107, 1996

*Quoted with permission of The Absolute Sound*
Audio Artistry Beethoven loudspeaker system

Shannon Dickson

Audio Artistry’s Beethoven is the banner model of the company’s Composer series, which includes the entry-level Vivaldi as well as the Dvorak I reviewed in the April 1996 Stereophile (Vol.19 No.4, p.204). Like the Dvorak, the Beethoven is a four-piece, bi-amplified, dynamic dipole design; unlike the Dvorak, the Beethoven has been taken to the nth degree of refinement.

Since many of the major design features common to both speakers were described in depth in the Dvorak review, only the most salient characteristics shared by the Beethoven are revisited here. Those interested in a more complete analysis of the fundamental principles behind these unusual speakers are encouraged to track down the Dvorak review.

The Beethoven...

... is essentially a Dvorak on steroids. Each main panel contains five top-of-the-line ScanSpeak drivers. Two custom-made 10" paper/carbon-doped woofers handle the panel’s bass response up to 200Hz, at which point they cross over to two 8" Kevlar-coned midbass units arranged in a symmetrical array above and below a custom version of the Revelator, ScanSpeak’s premier silk-dome tweeter.

The 8" and 10" drivers are not attached to the front baffle with screws. Audio Artistry pressure-fits these drivers via the rear spine; the drivers are sandwiched between the spine and the back of the baffle, where their front rims fit into precisely routed cavities filled with a special damping material. This mounting technique is said to reduce driver distortion and the transfer of vibrations to the front panel, and gives the baffle a beautifully clean appearance. Each of these drivers has a vented pole-piece; corresponding holes along the spine accommodate the required venting.

Two wide strips of grillecloth run from top to bottom on either side of the rear spine to give the speaker a neat, finished appearance. This cloth also conceals absorbive material used to attenuate higher frequencies radiating from the rear wave of the 8" midrange drivers. In conjunction with the use of a monopole tweeter, this damping is consistent with Audio Artistry’s contention that dipole radiation of treble frequencies is undesirable.

Seated on the rear two-thirds of each main-panel plinth is a detachable passive crossover box. This enclosure is chock-full of very-high-quality passive components. Large Aeon polypropylene caps, heatsunk Cadcocker power resistors, and air-core inductors handle frequency division and impedance compensation between each of the main-panel drivers. Three sets of quality Cardas binding posts are mounted on the top rear of the crossover box for optional (and recommended) tri-wiring of the main panel. A harness of Cardas conductors connects the binding posts to a three-way Neutrik SpeakOn connector, which in turn attaches the crossover to the speaker via its mating half, located near the bottom rear of the main panel. This arrangement provides flexibility and allows easy upgrading of the crossover without having to send the speaker back to the factory. In addition, the crossover box is isolated from panel vibrations via effective E.A.R. damping feet.

Rather than assign each speaker a serial number, Audio Artistry mounts a large copper nameplate engraved with a unique name, typically related in some way to Beethoven’s music, on the top of each passive crossover.

Each Beethoven subwoofer cabinet is open to the front and back and contains four 12" drivers. David Copperfield must have been consulted to figure out how to squeeze four large woofers inside a box this compact. The drivers are arranged so that their back-and-forth motion partially cancels vibrations generated by each driver, resulting in very little transfer of resonant energy to the cabinet and floor.

The two main panels and tops of each subwoofer cabinet are finished in gorgeous mirror-like “piano black” lacquer. Solid rosewood is used for the narrow side panels and rear center spine, and is grain-matched to the veneer on the side of each woofer.

The active crossover, housed in a metal chassis fitted with a black anodized faceplate, can feed either a pair of stereo amplifiers or two sets of monoblocks. This crossover handles the 100Hz transition between panels and woofers and performs equalization both...

1 Back issues of Stereophile are available by calling (800) 358-6274.
above and below this crossover point. The EQ above 100Hz helps achieve a smooth frequency response from the panel’s dipole drivers, while below 100Hz the EQ corrects for the dipole woofer’s natural rolloff, resulting in a nearly flat response down to 20Hz. If you have a very small room or a limited budget, you can use the main panels alone. In such cases the woofer section is turned off, extending the main panel’s response down to around 40Hz.

On the faceplate you’ll find a blue operating LED and a button labeled “Video.” Pressing this button minimizes subwoofer excursion when playing back very loud explosions on some laserdisc and DVD soundtracks, or the intense subsonic rumble occasionally heard on LPs. This is accomplished through a gentle 6dB/octave rolloff from 40Hz on down.

On the rear of this chassis are a DIN connector for attaching the external power supply, and switches to turn each subwoofer on or off. Separate woofer-level knobs are also provided for up to 12dB of adjustment in order to match the system to amplifiers of different gain structures and/or to a wide variety of rooms. Also, a pair of jumpers located on the circuit board allows an additional 10dB of woofer-level control, though I’ve never heard of anyone needing to use that feature.

The active crossover is fitted with XLR connectors and a superbly balanced interface topology comprising a pair of Jensen JT-10KBD input transformers and a clever output circuit design, resulting in a true universal interface. In other words, the crossover is equally happy receiving or driving a balanced or single-ended source or load. Jensen’s transformers are highly linear, wide-bandwidth devices that present an input impedance of around 39k ohms for the driving preamp. A version of the crossover employing an RF filter and actively balanced input stage is available as an option in place of the input transformer. The crossover circuitry was optimized for maximum dynamic range and signal/noise when used only between a preamp and amplifier. Don’t feed a high-output (over 2.7V RMS) source component directly into the crossover.

As with the passive crossover, only first-class components are used. Every resistor is a Precision Resistive Products high-precision, low-noise design with 0.1% tolerance and a 10 parts per million temperature coefficient. In addition, 2% IMB film caps are used throughout the audio signal path. The board contains extensive local power-supply filtering and decoupling, along with effective RFI filtering applied at each input and output. Audio Artistry chose Burr-Brown’s excellent-sounding OPA-2604 amplifiers to handle EQ duties.

While the Beethoven system is a true full-range design and contains far more components than the typical speaker, it is not visually imposing in a listening room. The low-profile woofers can be located along either side wall, and the elegant main panels are very easy on the eye, blending well even into rooms of modest size.

**Sonic splendor**

Though the Dvorak reviewed last year was designed to a price point, I came to prefer it over many more expensive models, even if some had a slight performance edge over the Dvorak in one particular area of another. My preference stemmed from the open perspective and overall naturalness with which the Dvorak portrayed so many forms of music despite several minor flaws, among them a less transparent resolution of soundstage detail compared to the very best, and an upper midrange that, while certainly not overtly bright, leaned a bit in that direction.

That first-generation Dvorak was an excellent work-in-progress, but the Beethoven is a milestone achievement. It possesses every positive attribute of the Dvorak (except its lower price), yet manages to improve on each of those assets while either minimizing or eliminating that speaker’s shortcomings. Beethoven virtues—such as an enhanced sense
of rhythmic swing, awesome transparency, effortless resolution, and a more solid, dynamic bass — expand upon the Dvorak's reduction in room-induced colorations.2

Compared to previous box speakers used in my room, the relative lack of standing-wave excitation and midrange masking from the Dvorak and the Beethoven produced a pronounced feeling of being enveloped in the soundfield of good recordings. The music seemed to flow out from the soundstage, fill my listening room, then decay back into the silence from whence it had come without the usual sensation of the room pressing in on me from all sides during dynamic passages — a quality that greatly enhances the sense of "being there." Most significant, though, the Beethoven brought to the party some extraordinary refinements I'd not experienced in any other speaker.

But to keep things in perspective: We're still a good distance from flawless sound reproduction, and likely will be for the considerable future. The limitations imposed by two-channel stereo remain the foremost barriers. Nevertheless, the Beethoven is the current prime candidate for Low-Distortion Champ when replaying full-range music at realistic levels — especially when all forms of significant masking and room interaction are taken into account. However, Siegfried Linkwitz is quick to acknowledge that the search continues for components of even lower distortion. Further improvements in driver construction and crossover design remain to be realized, along with solutions to a number of other challenges.

This perennial problem is a little like peeling an artichoke. As you strip away successive layers of coloration and distortion, the taste becomes increasingly subtle and succulent, yet there always seems to be another layer to remove. I've no doubt that the same analogy will apply to future refinements in the art of speaker design, yet the amalgam of attributes resulting from the many choices embodied in the Beethoven constitute much more than an incremental step forward. Indeed, the overall results are so compelling that one can be forgiven for mistaking a wonderful late-night symphony heard through these speakers for the true heart of the vegetable.

I'll spare you a recitation of the list of virtues one should rightfully expect from any "statement" speaker worthy of the name. Rest assured that the Beethoven is extremely well balanced, from its awesome bass and superlubly natural midrange to its extended, delicately transparent treble. Instead, I'll highlight those areas of sonic performance alluded to earlier, in which the Beethoven exceeds that of every other system I'm familiar with, in some instances by a wide margin.

A study in contrast: In addition to the many qualities carried over from the Dvorak, perhaps the most stunning hallmark of the Beethoven's sonic prowess was the complete effortlessness with which it conveyed the subtlest nuances, even in the midst of intensely dynamic, complex musical passages. Specifically, the timbral characteristics of and spatial relationships between instruments and/or voices were fully delineated, conveyed with often startling exuberance. Perceptions like the shimmering decay of a triangle were plainly evident, simultaneous with the climax of mass strings, brass, and timpani, all of which were themselves distinctly defined as individual

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2 As more affordable direct precursors of the Beethoven, both the Dvorak and smaller Vivaldi speakers have recently undergone significant revisions resulting from the trickle-down of insights Audio Artistry gained while developing the Beethoven. Currently I'm also using a pair of revised Dvoraks in my second reference system, and can report that the change to a soft-dome tweeter, new 8" midbass drivers, and changes in the crossover produce an upper midrange/treble that's cleaner, smoother, and more transparent than the original version. Also, the Dvorak's overall tonal balance is now closer to the Beethoven's.

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Associated Equipment

**Analog source:** Immedia RPM-2 turntable and improved RPM-2 unipivot arm; Sounds of Silence Crown Jewel and Lyra DaCapo phono cartridges.

**Digital sources:** Muse Model 5 with PS interface, Theta Data Basic 2, Sonic Frontiers SFT-1 transports; Wadia 16 CD player; Muse Model Two-Plus with PS interface, Theta Gen.Va, Sonic Frontiers SFD-2 Mk.II processors.

**Preamplifiers:** Jeff Rowland Design Group Coherence-Cadence battery-powered line/phonocombo, Muse Model 3, Sonic Frontiers SFL-2, Audio Research LS22, BAT VK-3.

**Power amplifiers:** Jeff Rowland Design Group Model 6 battery-powered monoblocks (two pairs), Ayre V-3, Muse Model 160 stereo amplifiers (two), BEL-1001 Mk.II.

**Cables:** Cardas Golden Cross speaker cable and interconnects, TARA Labs Decade speaker cable, Discovery 1-2-3 cable and Signature interconnect, Kimber 8TC speaker cable, Nordost Flatline Red Dawn speaker cable.

**Digital cables:** Cardas AES/EBU, Illuminati-Kimber Orchid, Aural Symphonics AES/EBU, Audient AudiTonic, Marigo Reference.

**Accessories:** API Power Wedges and Power Enhancer, Cardas and Marigo power cords, Vibraplane and Newport Benchtop pneumatic isolation platforms (source components) fed by a Jum-Air compressor, Townsend Seismic Sinks, Signal Guard platform, Arcetri Airhead platform, Black Diamond Racing plinths (line-level components), D'Feet SH-22 damping pucks, Marigo Bear Feet, ASC Tube Traps, and a slew of other pointy things and compliant supports.

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Shannon Dickson

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and the congestion of the music's very foundation during a climax, tends to truncate the full expression of a performance. It's a stark reminder that you're listening to a mere stereo.

The Beethoven didn't do this. Instead, its remarkable and concurrent reproduction of each instrument's unique dynamic range often conferred a profound musical experience. The essential character of the sound was maintained from top to bottom throughout dramatic changes in dynamics, regardless of the musical style. In the Doobie Brothers' recent live CD, *Rockin' Down the Highway* (Columbia/Legacy J2K 64996), such fumi nuances as the mechanical sounds from the drummer's hi-hat pedal, and the delicate harmonic extension of the driving bass line, were as clear as a bell, even when the average volume level was raised to well over 103dB! For your hearing's sake, I caution against listening to any music at such sustained levels, but the Beethovens never seemed the least bit fazed while doing so. I'm sure it will come as a surprise to dipole fans that the Beethoven's proved to be awesome rock'n'roll speakers.

The Beethoven's proved to be awesome rock'n'roll speakers. In a related effect, when I listened to clearly recorded music at very high levels, the volume seemed almost normal, the texture remaining delicate and refined. After spending some time with this speaker, it became apparent that what frequently determines the perception of loudness and often passes for "slam" or "dynamic range" in more traditional designs is, in part, the limitations imposed by that system's inherent distortions.

Any well-made live recording demonstrated the Beethoven's synergy of superb contrast, natural tonal balance, and rhythmic drive. In Peter McGrath's new recording of the first Cello and Piano Concertos of Shostakovich (Audiofon CD-72060), the interplay between Valentina Lisitsa's vibrant piano and the tactile sensation of real trumpets and brass toward the end of the piano concerto was a total mind-bender through the Beethoven. The piano's tonal character and complex harmonic richness were spot-on down through its lowest registers, while, at the same time, the trumpet's pure, smooth tonality exploded into the bite and blare of that instrument in full voice.

The Beethoven is quite sensitive, 2.83V of B-weighted noise generating an SPL of 88.5dB at 1m on the tweeter axis. The impedance of the panel, however, (fig.1) drops significantly below 4 ohms between 45Hz and 210Hz, and to 4 ohms in the midrange. A good solid-state power amplifier would best drive this speaker, as suggested by Audio Artistry themselves. The impedance peak at 22Hz I assume is due to the free-air resonance of the twin woofers.

The impedance plot of the subwoofer module (fig.2, plotted with a 50 ohm vertical scale) reveals the unit to be very easy to drive, the minimum value being a benign 11.8 ohms at 57Hz. The wrinkles in the trace between 100Hz and 400Hz, however, indicate the presence of some cabinet resonances. Whether or not these will have any audible consequences will depend on the rolloff supplied by the active crossover. The low-pass feed to the subwoofer with the control set to its "Normal" and "Video" positions is shown to the left of fig.3: in the first position, a boost of 14dB at 10Hz is applied to compensate for the dipole rolloff; set to "Video," the boost is cut to 2.6dB at 19Hz.

Fig.4 shows the subwoofer's intrinsic response, measured in the nearfield without the crossover (bottom trace below 40Hz, top trace above 70Hz). Flat through the bass, it rises in the lower midrange due to the resonant behavior noted in the impedance plot. However, as shown by the equalized responses (bottom two traces above 40Hz), these peaks are well suppressed by the crossover, allowing the subwoofer effectively to cover just the mid- and low-bass regions.

To the right of fig.3 are shown the crossover's complementary high-pass responses for the drive to the Beethoven panel, with the woofers turned on and off. A small degree of tonal shaping can be seen between 200Hz and 1kHz. Without the subwoofers, the crossover adds a modest amount of boost below 150Hz to flatten and
Human vocals provided another excellent example of this speaker's resolution of subtle inflections amid larger dynamics. The swell of many voices heard in choral music will often generate loads of intermodulation distortion in a speaker, making it sound like one large sea of barely distinguishable singers. Playing one of Keith Johnson's excellent choral recordings of the Turtle Creek Chorale on Reference Recordings was a revelation through the Beethoven. From the most delicate passages to full-blast crescendos with organ and orchestra, the characters of individual singers never lost focus or distinctness. Now that I can fully appreciate such expansive emotional swing from the sublime to the exalted, better choral recordings have become some of my favorite music.

Another benefit of the Beethoven's resolving power was that I could hear the tangible nature of good music whether I turned the volume up or down. When gradually turning the volume up with my remote-controlled Rowland Coherence preamp, I had the distinct sensation of my chair being pulled closer to the stage. Turning the level down, the perception was reversed: I felt slowly drawn back up the aisle, all the while still experiencing the spooky sensation of breathing the same air space as the performers! Also, without the averaging impact from room-masking, I discovered that favorite recordings "locked in" over a wider range of volume settings than before, making a remote-controlled preamp a highly recommended asset.

**Landmark bass:** Earlier I mentioned how deep-bass extension helps establish the rhythmic drive, natural tonality, and perception of "presence." Certainly, with eight 12" and four 10" drivers, you hope that genuine low-end extension would be a given. But it's the naturalness with which this region is reproduced that sets a new standard in my experience. Listening to a typical speaker, one's attention is often focused first on the upper midrange and treble: only afterward does one notice whether the bass is tight or loose, articulate or blobby. With the Beethoven, everything sprang from the bottom on up, the higher frequencies naturally in sync with the power of the music.

The Beethoven's majestic presentation of the lower region had such a powerful influence because much of the emotional feeling of music is established by the ebbs and flows of the mid- to upper bass. When the deep bass is absent, and the quality of the mid- to upper bass is extend the panel's output, with then a steep rolloff below 40Hz. When the subwoofers are used, the crossover gently rolls out the panel woofers below 100Hz. The crossover's input impedance was a high 86k ohms (balanced), while its output impedance was a low 450 ohms. The insertion loss at 1kHz was 0.1dB, due to the response shaping.

The individual responses of the panel's drive-units on the tweeter axis are shown in fig.5. The crossover between the twin midrange units and the tweeter can be seen at 2.2kHz; the midrange/woofer crossover is placed at 100Hz, but this is obscured by a rise in the midrange units' output at the bottom end of their range. The crossover's tonal shaping appears to compensate for this, which can be seen in fig.6, which shows the overall response of the Beethoven panel on the tweeter axis, equalized by the crossover and spliced to the nearfield response of the woofers with the crossover set to subwoofers on and off. The speaker is quite flat on-axis through the upper midrange and treble, but the apparent excess of energy in the bass is due to the fact that the nearfield measurement does not allow for the dipole cancellation typical of open-backed enclosures.

The Beethoven panel's dipole design means its off-axis behavior will be very different from that of a normal monopole design. Fig.7 shows the differences in the response as the measuring microphone moved round to 135° on either side of the tweeter axis. Other than in the mid-treble region, around the cursor position at 461Hz, the speaker output falls off evenly across the band to the panel's sides. Below 2kHz, it reaches a minimum between 90° and 100°.
smeared by turgid room interactions and box distortions, the full expression of the music is short-circuited. The Beethoven's mastery of this region establishes an irresistible rhythmic drive that had me logging far more hours of air guitar and air baton than ever before.

**Full-bodied imaging:** A key characteristic accompanying the Beethoven's openness and clarity is their precise delineation of the spatial relationships between individual instruments within a continuous soundfield. I heard none of the exaggerated soundstages projected by speakers whose sidewall and ceiling reflections skew the illusions of width and depth. Instead, imaging took on a tactile realism. With good recordings, the speakers simply vanished, leaving solid, fully dimensioned performers enrobed in my living room — instead of the “cardboard-cut-out” style of etched and layered imagery as viewed through a window framed between two speakers. Though this latter, layered style of imagery can be initially impressive, it wears thin when one hears the same “image signature” on nearly every recording.

The actual physical sensation of sonic images was also quite different through the Beethoven than what I've typically experienced. Perhaps it was the combination of the system's stunning dynamic contrast, natural tonal balance, and appealing openness that resulted in the tangible sense of "body" reproduced. Or maybe the lack of "room pressure" mentioned earlier allowed the textures of instruments to develop and decay in a more natural fashion. Whatever the cause, it was as if I could physically "feel" the skin of a drum, the air shimmering off of a cymbal, or the vibration projected from a piano's soundboard.

A further testament to the quality of this system was its chameleonlike character. Every speaker, including this one, possesses some "sonic flavor." But with its low inherent distortion and the ability to adjust the woofer levels, the Beethoven's signature was subsumed by that of each recording. The payoff of the neutral in-room response was that all sorts of music continued to sound refreshingly different and interesting.

The combination of qualities described so far would make the Beethoven an invaluable reference tool for reviewers and recording engineers alike. I could discern the subtleties of microphone type and recording technique with pinpoint accuracy. Comparing different preamps, DACs, and amplifiers also became a far easier task — not to mention more enjoy-

the side. Vertically (fig.8), the response doesn’t change much as long as the listener's ear is between the centers of the two midrange units (middle three traces), around 36”-45” from the floor.

In the time domain, the Beethoven's step response (fig.9) is not coherent. The tweeter and midrange units appear to be connected with inverted acoustic polarity, the woofer with positive polarity. Fig.10 shows the cumulative spectral decay plot calculated from the Beethoven's impulse response. It is superbly clean throughout the treble, but there is some hash present in the low treble, which I suspect is due to early reflections from the speaker's structure. However, as SD had nothing but praise for the Beethoven's sound, I assume this is benign.

Measuring large dipole speakers is always problematic, because the underlying assumptions about the measurement techniques and their relationship with the device under test are no longer completely valid. Given that caveat, the Beethoven's measured performance is excellent.

—John Atkinson

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**Fig.8** Audio Artistry Beethoven, vertical response family at 50”, normalized to response on tweeter axis, from front to back: differences in response 20°-5° above-axis; reference response; differences in response 5°-10° below-axis.

**Fig.10** Audio Artistry Beethoven, cumulative spectral-decay plot at 50° (0.15ms risetime).

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with this class of speaker. Without the room masking and excess bass many audiophiles have become conditioned to, you'll hear both a lot more and a lot less than you're accustomed to hearing from favorite recordings: less coloration and more musical detail, particularly in the lower midrange and bass. My experience was that, as I listened to an ever-greater variety of music running the gamut of recording quality from poor to awesome, the deeper my appreciation grew for the "rightness" of the Beethoven's performance. So give yourself some time to discover the Beethoven's special qualities.

• The absence of typical pressure variations in the room often takes a bit of adaptation as well, as mentioned above. However, this speaker is so dynamic and moves so much air that most people familiar with live music will adjust rather quickly to its more natural presentation. Indeed, after a few months with the Beethoven I was shocked when I heard just how distorted the bottom third of most systems really sound when played in normal rooms.

Speaking of bass: Don't turn the woofer levels up too high to try to "hear" the subwoofers. That's a mistake commonly made during the adjustment phase. When the subwoofer level is properly set, you should hear no directional clue that any sound is coming from the two woofer cabinets.

• The Beethoven are very easy to set up for good sound, particularly compared to most other large systems.

The Beethoven are very easy to set up for good sound, particularly compared to most other large systems.

Final thoughts
The Audio Artistry Beethoven captivated me as much by its grace as by its grandeur, opening up new levels of musical appreciation. After using the system for more than nine months, I'm still continually amazed at just how much information the brain can sort and the emotions assimilate at one time when listening to it.

Certainly, several among the elite of world-class speakers share a number of the Beethoven's superb qualities, such as low-distortion drivers, outstanding resolution, near-holographic imagery, and a beautiful tonal balance. Most of these designs are also immensely satisfying. However, when you add those attributes to this speaker's lack of room interaction, stunning low-frequency performance, and superior real-world dynamic contrast, I know of no other commercial offering that possesses as many virtues and blends them so successfully, regardless of price.

Whether valued from the objective perspective of its parts count, or by the subjective pleasure I've experienced with it, the Audio Artistry Beethoven system is, at $24,750, a bargain! That's a lot of money any way you slice it. The Beethoven, though, remains the single most impressive audio component I've yet encountered — an instant classic, sure to make a real contribution toward future advances in the art of speaker design. Enjoy!
Mark Levinson No.39 CD player

Wes Phillips

My next-door neighbor bought a late-'70s Porsche 924 last week, and I'm really glad he did. For one thing, it adds a little class to the 'hood — my 1984 Grand Wagoneer's peeling "wood paneling" is far more typical of the vehicles in my part of town. And Eric is just so obviously thrilled to own a piece of the legend — a real Teutonic driving machine.

"The 924 is a baby Porsche," pooched John Atkinson when I told him about Eric's new ride. And he's right — it's not a racing machine. The 924 was designed to appeal to a new Porsche customer — one who couldn't afford their "grown-up" cars, or perhaps one who wanted a slightly less challenging drive.

But Eric doesn't care about that. He's got a Porsche, and he obviously feels it lives up to its patrimony. He loves its zippy handling, the effortless way it settles into a speed-limit-amplifying cruising speed, and even (as he pointed out to me while drying it off with a chamois) the unexpected little flares that grace its bodywork. He might drive a truck to work, but after 5:00, he's cruising in his own piece of the dream.

I know exactly how he feels. After countless hours spent salivating over the sound of JA's Mark Levinson Nos.31.5/30.5 digital front-end and, more recently, Tom Norton's Nos.36/37 combo, I've finally taken home a Mark Levinson digital product for my own use: the single-chassis No.39 CD player/processor. At $5995, the '39 costs a fifth of the price of a '30.5/31.5 combo, yet the piece is pure Mark Levinson: built so solidly that it appears armor-clad, paraking of the same contemporary industrial design as its more expensive brethren, and brimming over with performance and convenience features that make sense. A "baby" Madrigal? In price, maybe, but while using it I certainly feel as if I finally have hold of my own piece of the dream.

"Music . . . results from ecstasies of logic"
(Alban Berg, 1885–1935)

To think of the No.39 as a single-box CD player is to miss a lot of Madrigal's thrust in designing it. It is, of course, a one-box player utilizing a tremendous amount of the technology developed for the Nos.36 and 37 separates, but the company didn't just build a pared-down version of its most commercially successful processor and transport. Madrigal speculated that there might be another type of audiophile out there — one seeking high-quality sound but unwilling to have his or her listening room disappear under an avalanche of boxes.

Thus flexibility became the hallmark of the No.39 project. Madrigal's formal name for the piece, "CD player/processor," hints at it. Madrigal included two digital inputs on the unit: one coaxial input, through a standard RCA jack; the other a TosLink optical input. "TosLink?" I hear you gasp. "Why such a crappy connection?" Essentially to broaden the types of input devices the '39 can accommodate, Madrigal's Jon Herron explained. Laserdisc players seldom have any other digital output, so the TosLink input allows the '39 to serve as a superior processor in AV systems. Or for DSS control boxes.

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Dimensions: 15.75" (40cm) W by 2.84" (9.75cm) H by 13.38" (34cm) D. Shipping weight: 50 lbs.

Serial number of unit reviewed: 2824.

Price: $5995. Approximate number of dealers: 85.

Manufacturer: Madrigal Audio Laboratories, Inc., 2081 South Main Street, P.O. Box 781, Middletown, CT 06457. Tel: (860) 346-0896. Fax: (860) 346-1540. http://www.madrigal.com.

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Mark Levinson No.39 CD player

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with digital out. Or for any other digital source, for that matter.

Of course, the No.39 also serves as a switching unit between digital sources. And its volume and balance controls, which operate in the analog domain, also allow it to be plugged directly into power amplifiers. In fact, Madrigal claims that the No.39 is essentially a No.37 transport with key elements of the No.36 processor and the No.380 preamp added — but its performance as a transport, they claim, is identical to that of the No.37.

There are a host of other convenience features written into the '39's software — ranging from the ability of the player to teach its remote signals to a learning remote to a whole host of programming and playlist features. Now, I've never programmed a CD player to recognize my favorite software — I tend to either play discs straight through, or to jump around them according to the whims of a moment. But the '39 allows you to program polarity, either for the entire disc or track by track. That's a feature so useful that I might even be willing to program in my entire collection to take advantage of it.

The No.39 is fully balanced in both the analog and digital domains. Info from the disc, or from the SE digital inputs, is immediately converted to a balanced signal before any processing or routing takes place. Analog conversion is accomplished with two 20-bit converters (of opposing polarity) per channel.

Despite what you may have heard, single-chassis CD players are not immune to jitter. There are fewer opportunities for jitter to be introduced in single-box designs, but you don't eliminate it entirely. To address the jitter question in its separates, Levinson uses a combination of CLJR (Closed Loop Jitter Reduction) on the transports, and Intel- ligent FIFO (First In, First Out) circuitry on the DACs. The No.39 employs Madrigal's CLJR system, in tandem with a double-speed CD-ROM drive. A custom-made crystal oscillator re-clocks the digital signal immediately before its conversion to analog. This, team Madrigal claims, eliminates transport-related jitter from the signal. The same crystal controls the all-digital servo as well as the D/A conversion process.

Madrigal claims that, in terms of playing CDs, the '39 performs as well as the '37/36 combination. However, eliminating the FIFO circuitry from the No.39's processor module does mean that a '30.5 or a '36 will sound better when processing outside digital sources. The No.39 incorporates HDCD.

I measured the No.39's performance both from its balanced and unbalanced outputs. Except where noted, my comments refer to the balanced outputs. The fixed output is set to 3.5v. Using the variable output, with the volume control set to its maximum position, the No.39 fed with a 1kHz, 0dBFS signal gave out an enormous 17.75V RMS (balanced) and 8.87V RMS (unbalanced). Dropping the volume by an indicated 12.9dB on the display to "60.3" resulted in a −12.95dB drop to a more reasonable 4V (balanced) and 2V (unbalanced). Used without a preamp, the No.39 will have more than enough output to drive any power amplifier to clipping. The output impedance was low, at a measured 10 ohms (unbalanced) and 20 ohms (balanced). With pin 2 hot, the balanced output was in the correct polarity.

The No.39's balanced frequency response at 0dBFS is shown in fig.1 (the unbalanced response was identical, so is not shown). Perfectly flat over almost the entire audio band, the response does feature an inconsequential droop of just under 0.25dB at 20kHz. Note the excellent channel balance in this graph: better than 0.03dB. This was maintained at almost all volume settings, a testament to the well-engineered volume control. The No.39 had zero de-emphasis error across the audio band (not shown). The channel separation (also not shown) was a superb 119dB at 1kHz, decreasing to 107dB at 16kHz.

Fig.2 shows a spectral analysis of the No.39's output while it decoded 16-bit data from a test CD representing a dithered 1kHz tone at −90.31dB. The plot is dominated by the dither noise, with no power-supply or distortion components evident. This is excellent performance.

Driving the '39's digital input from the Audio Precision System One's digital generator and setting the word length to 20 bits gave the spectrum shown in fig.3. Despite the dramatic reduction in the dither noise level, no distortion components are unmasked, and the only power-supply artifacts making their presence known are hints of 60Hz and 180Hz in the right channel. Again, this reveals excellent engi-
decoding and implements it superbly — it makes the strongest argument I've ever heard for that process. The digital filtering and processing maintain what Madrigal calls "true 24-bit throughput capability" (24-bit in the digital domain, dithered down to 20-bit resolution in the D/A stages). This allows for playback of state-of-the-art digital sources, as JA and I discovered when we held a listening session at my house after tapping this year's Santa Fe Chamber Music Festival. We listened to our tapes straight-in from the Nagra-DY's 20-bit output and were happy enough with what we heard to be insufferably snug about the potential for this year's chamber-music CD. I'm sure the marlins helped somewhat, but the sound from the omni mikes was simply ravishing.

"... is the arithmetic of sounds"
(Claude Debussy, 1862–1918)
The Mark Levinson No.39 resembles other Levinson gear in styling. It's compact and nicely finished, with a small number of large silver buttons on its fascia. The slender 1/8" drawer is on the right, under the company logo, above a large power/standby button. A large, easily readable display features oversized red LED numbers and letters. I'm not at all wild about the red readout, but it's legible from any angle or distance obtainable in my listening room, even when the display is flooded with intense New Mexico early morning sunlight — somewhat I can't say about green or blue LEDs.

The usual transport functions all have their buttons, as do repeat and display intensity. There are also three multifunction buttons: Mode, Mode +, and Mode -. These last control the diverse programming functions; all of them are replicated on the substantial remote control, as are several additional features and a numeric keypad, which can be used — among other things — to directly access specific times on a disc.1

The rear panel has an IEC-style detachable power-cord connection, S/PDIF-RCA and AES/EBU digital outs, TosLink and S/PDIF RCA digital ins, balanced XLR and SE RCA analog outs, an external infrared input controller, and two custom Levinson communication ports utilizing locking jacks: a master/slave digital-out and a digital slave-in. These custom ports are for use only with other Levinson gear — if you already own such pieces, consult your dealer as to how best to use the ports.

"... is an outburst of the soul"
(Frederick Delius, 1862–1934)
I wish all high-end gear was as simple to use as the No.39. Once you learn your way around the modes, using the player/processor is so intuitive you'll forget how many functions it can actually...
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ally perform. Of course, if you use it only as a player with fixed output, there are no mysteries to unravel in the first place—all the transport functions are clearly marked.

For the first few weeks I auditioned the '39, that's what I did. With the Conrad-Johnson Premier Fourteen in the circuit as a preamp, I just loaded the discs into the drawer and hit Play. When it's used as a simple CD player, I couldn't fault the Levinson on any level. It sounded better with each succeeding day, but I can't claim it took long to break-in—three or four days, max.

Discs revealed the sort of tiny sonic details you'd expect a fine digital front-end to uncover. I heard plectra strike strings tentatively before the real attack, and I heard my share of stifled studio coughs and blown edits, but I can't really accuse the No.39 of accentuating such musically-beside-the-point trivia. On the contrary, what I noticed most was being drawn into the performances—hearing passion where it had not previously revealed itself to me.

For me, this has been one of digital's real sticking points. I love the convenience, the portability, the simplicity of manufacture, but when all is said and done, I still find some kernel of unhyped, relaxed, tonal reality in the best analog reproduction that our 16-bit/44.1kHz digital system simply doesn't match. That said, I haven't heard anything come closer than the Levinson No.39—although Krell's discontinued KPS-20i/L, if memory serves, didn't cede much ground to it, if any. (I'm not claiming that the No.39 is superior to the '31.5'/'30.5 combo. According to Madrigal, it shouldn't be. I wasn't able to compare the two simply because it's impossible to convince JA to part with his rig for any length of time—an attitude I perfectly understand.)

I was impressed with the '39's fine ability to place musicians in space, surrounded by air.

Michael Fremer has said that, as good as digital has gotten, he still can't listen to it for long. By that standard, the No.39 is a winner—I was able to settle in for extended listening sessions in which the only limitation was the stamina of my steplenz.

Maura O'Connell's Wandering Heart (Hannibal HNCD 1410) makes a good case for the No.39's strengths. Her voice is unusually rich and vibrant, yet powerful at the same time. It has a richly layered complexity not unlike the taste of a fine Islay malt, a taste that can initially be overwhelming—but relax, and that first intensity is replaced with successive revelations of smoky warmth, then a hint of sea iodine and salt, followed by herbs and wildflowers that linger on the tongue. With O'Connell, the initial strength of her delivery is supported by a smoky warmth of its own, and her intelligence and empathy also linger in the ear long after the song is over. That's how she sounds live—and it's how she sounds on the No.39. On some CD players that strength comes across as a touch of hardness, and the flowering subtleties are obscured in the digital opacity that our friend Fremer rails against every month.

As I listened to O'Connell sing Richard Thompson's "Down Where the Drunkards Roll," I was also impressed with the '39's fine ability to place musicians in space, surrounded by air. It took me a while to realize how well the player did this because it sounds so perfectly natural and organic. Not gimmicky, not "special"—just remarkably like music. Even John McSherry's Uileann pipes—system busters when reproduced badly—here sounded clean and clear and complex.

---

**Associated Equipment**

**LP playback:** Linn LP12 turntable with Naim Armageddon Power Supply, Naim ARO tonearm, van den Hul Frog cartridge; VPI TNT Mk.III turntable with Immedia RPM tonearm, Lyra Clavis D cartridge.

**Preamplifiers:** Conrad-Johnson Premier Fourteen line-stage, Premier Fifteen phono section; Ayre K-1.

**Power amplifiers:** Krell FPB 600; VTL Signature 750 monoblocks.

**Cables:** Kimber KCAG interconnects, Kimber Black Pearl speaker cables.

**Accessories:** Audio Power Industries Power Wedge 112; MIT Z-series power cables; Highwire Audio Power Wrap (on components with non-replaceable power cables); The Shelf by Black Diamond Racing; Golden Sound DH Cones.

**Sound treatment:** ASC Tube Traps, Studio Traps, Bass Traps; RPG Absfusors; Xanthodontous feline companion.

---

Wes Phillips
Beauty ... or the ... Beast

Ultra-linear short coil/long gap motor
All drivers used in Hologram speaker systems are designed and hand crafted by Hologram. A short voice coil in a long magnetic gap defines the Underhung voice coil system used in all Hologram designs. This completely symmetrical piston assembly keeps the magnetic force on the coil constant, dramatically reduces harmonic and transient distortion, and provides extremely linear excursion.

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Nonlinear long coil/short gap motor
99% of the drivers available today use standard nonlinear overhung voice coil motors, which are long voice coil in a short magnetic gap designs. This gives the drivers significantly higher harmonic distortion, and excursion becomes sloppy and nonlinear. The end result is colored and distorted low frequencies.

Ordinary woofer cone
Many materials have been used for woofer cones, the most common of which are Paper or polypropylene, these materials in most cases have a very slow and sluggish, non-coherent response. High resonance, break up and ringing are also common problems. Many of these problems are often found in most of the exotic woofer cone materials as well.

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(Listening to poorly reproduced pipes shrieking like fighting cats, it becomes easy to believe the old definition of a gentleman: one who can play the pipes, but doesn't.)

"...is the eye of the ear"

(Thomas Drake, Biblioteca, 1616)

Describing the No.39 by praising its performance as an ordinary CD player, however, is a little like complimenting Superman by counting up Clark Kent's Pulitzers—you ain't seen nothin' 'til he puts on the cape and tights. The '39 really came into its own when I took the preamp out of the system and started using the variable output, digital switching, and digital processing.

The fact that the Mark Levinson No.39 is also one of the best-sounding CD players I've heard to date could just be considered a bonus.

You think your preamp is transparent? You're probably wrong. I knew this, of course, but I've never heard a CD player's variable output that wasn't more colored or coarse than a good preamp. Not even the best 'em. So I was stunned by how good the '39 sounded going straight in. It was fast and clean—and more. More depth, more dynamics, more detail, more air...

Nor did I give up any control to obtain these gains. The volume is controllable in 0.1dB increments, ditto the balance. Despite the inconvenience of having to reinstall a preamp every time I wanted to listen to an LP, I spent the rest of my audition running the '39 straight into the FPB 600—and loving it.

You'd be amazed at the silly—but strangely useful—ways I found to benefit from the 0.1dB adjustability of the output. A few weeks ago I installed REL's $8000 Studio II subwoofer in the system while my wife was out of town, then proceeded to go on a four-day bass binge. While playing back Michael Murray's recording of Bach's Toccata and Fugue in G (Bach at Zurlorr, Telarc CD-83085) at house-shaking (but, I maintain, realistic) volume, I tripped a circuit-breaker. Using the variable output, I was able to find, within 0.1dB, the precise volume that would turn off my electricity. And it only took four tries...

Oh yeah, did I mention how well the '39 reproduces bass? It's deep and punchy where appropriate, but it always sounds organic to the music, never disconnected or different in character. I know some people like digital bass, but I frequently have found it off-putting. The No.39 gets it just right.

As I mentioned earlier, the Levinson also made a dandy D/A processor, even with 20-bit source material. When using the '39 as a processor, I found that the Sonic Frontiers Ultrajitterbug improved the sound of all digital inputs—even my LD player's TosLink output. However, I didn't find the reverse to be true. Using the '39 as a transport, I found it hard to hear improvements when I put the UJB in front of a processor. I guess that CLJR circuitry is successful.

"...is the poor man's Parnassus"

(R.W. Emerson, Journals, 1836–38)

What do you want in a digital playback system? If you want the utmost sound quality and totally unconfining flexibility, you're probably looking for separates—and you're also probably looking at a BIIIG price tag as well.

But if you're looking for enough flexibility to feel as though your choices aren't being restricted, you ought to contemplate the Mark Levinson No.39. The fact that it's also one of the best-sounding CD players I've heard to date could just be considered a bonus.

Is it competitive with the very-best-sounding units out there? I can't say for sure because I couldn't convince anyone to lend me a contender long enough to find out. Picky little rascal that I am, I can think of a few ways to improve the sound of the No.39, but not by much. I just don't think our current standard can get much better than this, although I'd be happy to be proven wrong.

What I can say is that the Mark Levinson No.39 reproduces music on the most exalted level; that it is well-built and reliable; that it offers an awful lot of intelligently implemented options to anyone looking for a CD player, a digital processor, or a switching unit; and that its volume control is superior to, or the equal of, that of almost any preamp I've ever heard. That's aplenty, as they say.

Factor-in the price, and it's pretty much a no-brainer. Anyone looking for top-notch digital sound has simply got to try the No.39. Even if all they want is a CD player.
Exposure owner/designer John Farlowe graduated from the University of Sussex at the end of the swinging ’60s. He put his B.Sc. in electronic engineering to use at HiWatt, manufacturers of tube guitar amplifiers. His keen interest in pro audio, particularly in sound reinforcement for rock bands, led him to Midas (studio mixing desks and systems), where, as director and designer, he designed and built mixing desks and got together with the late Dave Martin of Martin Audio. They became heavily involved in sound systems for Pink Floyd. Midas desks and Martin speakers were used at many live venues, including those at London’s Rainbow.

Seeking a quieter life, Farlowe founded Exposure Electronics — a small, specialist British audio company based in Brighton, Sussex, UK — some 20 years ago, and has since concentrated on high-end home audio. He has quietly built up an enviable if low-key reputation for his essentially handcrafted solid-state electronics, built using carefully selected transistors and classic discrete circuits. He uses traditional technologies, capacitor coupling at low level, and DC coupling at the power-amplifier outputs.

In our discussion about the design of his CD player, John Farlowe related his long experience with the effects of power-supply components on sound quality. His standard practice is to optimize amplifier performance by using oversized toroidal transformers wound to an exacting specification. Reservoir electrolytic capacitors are also built to his own specifications. He is also a fan of open-loop, non-feedback regulation for power amplifiers; even his small Type 25 integrated amplifier has fully stabilized supplies for its output stages.

Farlowe has remained an analog enthusiast. He continues to design LP phonos stages while patiently observing the industry scramble to integrated circuits, microprocessors, and digital processing and digital audio. But until now, the Exposure range of amplifiers hasn’t included source components. Conservative (with a small c) almost to a fault, Exposure long resisted the march toward user convenience and digital sources.

Then, a year ago, an upgraded version of Exposure’s popular integrated amplifier included what was for them a remarkable advance: remote control of input selection and volume. Still more extraordinary was the presence on the remote handset of an array of ancillary buttons whose purpose was nothing less than the control of a CD player — Exposure did not manufacture a CD player. We were assured that the remote would “operate any player you choose with Philips-compatible software.”

But the writing was on the wall. A year later Exposure announced that they had reached the point of product approval for a CD-player design long cooked up in their research labs. And here it is — their first digital replay product, their first source component, and the subject of this review.

Perhaps the last of the classic audio companies to embrace digital technologies, Exposure is still treading cautiously. Many CD technologies were examined, including designs from both Japan and Europe. The decision to release a digital audio product was delayed until Farlowe felt the sound quality attained compared favorably with established standards for analog replay, and would thus complement Exposure’s current amplifier range. This first CD player has the inevitable integrated circuits for data recovery and digital/analog conversion, but after this point, and in line with the company’s design philosophy, the circuitry is wholly discrete, executed in classic Exposure fashion.

Technology

The $1995 Exposure CD player is a one-box, full-size CD player with a fixed analog output of nominal 2V level and front drawer loading. The case is traditional Exposure: sheet metal (argon-welded aluminum) with a thick anodized alloy front panel and a modicum of acoustic damping on the aluminum top cover. Following the current fashion for upmarket products, front-panel controls are reduced to a minimum: Play, Stop, Next, Previous Track, and Repeat. A fully equipped numeric keypad is provided on the remote handset, which offers quick track access and sequence programming. The handset has a good operating range of up to
30° under normal lighting conditions.

The choice of a single-box design was deliberate in order to be competitive with designs from Audiolab, Marantz, Meridian, and the like. With the data-retrieval system directly coupled to the digital filter and thence to the DAC, the system suffers minimal jitter: there is no interface in the way. In a two-box player, the S/PDIF or AES/EBU interfaces can introduce significant jitter whose rejection is then the responsibility of sophisticated and costly input circuitry in the DAC. Even with extensive precautions, jitter removal is never entirely certain or complete. Time and again, the most elaborate jitter-busting techniques—even those involving large static memory—do not achieve absolute timing precision.

In common with some US majors such as Conrad-Johnson and ARC, Exposure has chosen a relatively simple Philips platform on which to found this design. For the transport, the ubiquitous CDJ-12.4 is used, noteworthy for its effectiveness if simple anti-vibration suspension of molded polymer, and its noiseless, low-mass magnetic declamp. High-quality power is derived from a large toroidal transformer with segregated secondary windings and generous reservoir capacitors of power-amplifier grade.

The Philips "engine" or microprocessor and transport control section includes the digital filter. In addition to some proprietary modifications, the crystal oscillator in the Philips engine is disabled and a separate low-jitter, buffered oscillator is installed, provided with its own local supplies and a high-precision crystal.

The digital filter is unremarkable; it's a low-order type beneficially related to the much-respected Philips 7220 series.

With the data-retrieval system directly coupled to the digital filter and thence to the DAC, the system suffers minimal jitter.

In common with the older filter, there's some mild passband ripple evident, if of questionable audibility. De-emphasis is accomplished in the digital domain. There is also a digital volume control embedded in the digital filter chip (more on this later).

The 8x-oversampling filter outputs 16-bit words to the TDA 1545 surface-mount DAC, a multibit two-channel part using Philips "CC" (Continuous Calibration) technology to maintain 16-bit linearity. This also has some parallels with a long-established Philips multibit DAC, the TDA 1541A, with which it shares a "kink" in the linearity curve below ~80dB. This leads to 3–4dB of level error at ~90dB. As with the 1985 1541A, some sense of order returns below ~95dB.

The DAC's current-output signals are led via selected screened cables to the Exposure's analog board. Here a selected transistor is connected in common-base mode with an active load to deliver a phase-correct voltage to the passive filter. This in turn leads to the output buffer, a powerful emitter-follower with a constant current load. This also acts as a Sallen and Key low-pass filter, using polypropylene film capacitors.

The analog output is noninvasively muted by relay, and capacitor-coupled via a small Philips electrolytic. You might question such a choice until you discover that this is properly polarized by a DC offset to achieve an optimal operating point and the desired sound quality. Thus from the DAC current output there are only two active SE stages in the audio path—an interesting prospect. One clue to the Exposure's potential sound quality is the very short path between the digital data coming off the CD and the DAC.

---

**Associated Equipment**

**CD transports:** Theta Basic, Krell KPS-20i.

**D/A processors:** Muse DAC1, Audio Synthesis DAX-2, QED Digit Reference.

**CD players:** Krell KPS-20i/L, Audiolab 8000CD, Marantz 17 KI Signature, Cary CD, Krell KAV-300xd.

**Preamplifiers:** Conrad-Johnson Premier Fourteen, Audio Synthesis Passion.

**Power amplifiers:** Krell FPB 600, Conrad-Johnson Premier Eleven A, Naim NAP250.

**Integrated amplifiers:** Krell KAV-300i, Audiolab 8000S, Musical Fidelity A1000.

**Loudspeakers:** Wilson Audio WITT and CUB, Quad ESL-63, Spendor SP-2-2.

**Cables:** Siltech and van den Hul.

—Martin Colloms
With a low output impedance, there won't be any matching problems to cables or amplifiers. The audio output is single-ended only, via gold-plated RCA phono connectors with PTFE insulation. A digital data output is provided, though I don't think this model is specifically designed to excel as a transport. S/PDIF output is unbalanced via a 75 ohm, transformer-isolated BNC connector. With respect to electromagnetic emissions and immunity, the Exposure player passed the appropriate "CE" independent laboratory tests.

Sound

Many CD players need significant warmup, and the Exposure was no exception. Out of the box, the Exposure's sound was uninspiring: rather flat, lifeless, and gray, with soft detail obscuring grain in the treble. It wasn't really that bad — it was just that the player improved so much after an overnight warmup that its first impressions seemed lousy by comparison. The usual conditioning was needed for the powersupply electrolytic capacitors, and for other components that may be electrically or mechanically stressed in manufacture or in assembly. The digital section, in particular the DAC, seems to benefit from an hour or two of warmup even when the player has been fully run-in. Presumably this is due to operating temperatures taking an hour or two to stabilize following turn-on from cold. When not playing a disc, the laser and motors shut down, and there's little else to draw significant power. Since the

The Art and Science of CD-player Design

Engineering, as expressed by great audio designers, frequently bridges the gulf between science and art. Some audio products can be better understood as expositions of sound reproduction techniques than as clear expositions of scientific principles. But the achievement of a high artistic standard for audio equipment is gauged by sound quality, not design principles.

A component that by received standards has a weak technological base may nonetheless perform well, even outstandingly, when executed by a good designer. "This can't be done!" exclaims science-based dichotomies. "Look at the inferior test results!" Yet the evidence of our own ears shows that it can. Many reputable CD players have apparently humble technological origins, even remarkably low-cost platforms. On the other hand, some demonstrate nearly flawless, high-tech execution of the best science available, yet still fail to make the grade on music. (There are, of course, those few components that measure well and sound superior.)

Our knowledge base is incomplete in this area, and speculation is dangerous. Nevertheless, it's worth exploring. A CD player's output stage resembles a preamplifier's line stage. On top of the effort involved in creating the digital circuits, the designer of a CD player therefore has to provide the equivalent of a great preamp, since without that stage we will never hear how good the intrinsic digital section might be. (When you think of the wide spectrum of sound quality available from preamplifiers, remember that these often costly and elaborate designs don't have to process the ultrasonic signals emanating from a CD player's D/A converter.)

It's fair to say that many carefully engineered CD players marketed today fail to properly involve and entertain listeners because of their inadequate analog stages. You could also say that if an audio manufacturer produces a broad line of electronics that does not contain a really good preamp, that manufacturer is unlikely to produce a really good DAC or CD player.

Given our present state of knowledge, the analog section of a CD player is very likely to be more important to a player's sound quality than the digital section. This contradicts the extensive promotional hype concerning effective bit resolution, re-sampling rates, digital filter ripple, balancing in the digital domain, etc. I would not presume to say that such details don't matter; however, their subjective weight is often blown out of all proportion.

To quote examples, there are significant manufacturers who have succeeded in the CD-player field with relatively inexpensive, "low-tech," older-generation transport and digital technologies. These include Naim, Conrad-Johnson, and Audio Research — all of whom have proven track records in producing fine preamplifier analog stages — and now Exposure Electronics as well.
power consumption is very low, around 12W, I left the player on permanently, save for vacations.

Early on in the listening I was caught out by that built-in volume control — it looked innocent enough there on the Philips-style remote handset. And yes, it does work, with just-useable 2–3dB steps over a 60dB or so dynamic range. (The actual level is denoted by the number of six horizontal bars visible in the display.) This volume control operates in the digital domain with only moderate data precision. As a result, it reduces fidelity, and in this class of player the difference isn’t trivial. I have unknowingly set just one notch of digital attenuation and, judging by the resulting impairment, thought that the player had developed a fault. Now I understand those warnings printed in triplicate in the instruction manual to leave the volume set to maximum on the player itself. Still, this control is not entirely unusable in circumstances where fidelity is not crucial — say, background music for a dinner party. Otherwise, forget those two dangerous Volume Up & Down buttons: the sound quality with the digital volume engaged was several levels below that noted on that first cold start. In any case, the player will always reset to full volume and maximum resolution when switched on again.

Clearing these hurdles, I settled down to a series of enjoyable and entertaining sessions with the Exposure CD player. What might be interpreted as an early feeling of “quietness” was soon replaced by a growing realization that this player lacked the false glare, the “forwardness” and “whitened” quality, of so much digital replay. There was more than a hint of single-ended analog sound to this player: a sense of unforced vitality and quick and lively dynamics, with dynamic contrast and expression available at all levels and with any complexity of program. Reflecting Exposure’s analog sympathies, it really sounds more like a fine turntable system than a $2000 CD player.

However, the player did emit a low-level mechanical click between tracks: the output muting relay responding to the intertrack mute command on those discs that have this set during the mastering.1 You get used to it, but perhaps a bit of acoustic quieting for the relay would not go amiss.

While it didn’t have an obvious, im-

1 On the Stereophile music CDs, which fade to ambience rather than digital black between tracks, I asked the mastering engineer not to do this. — JA

mediately explosive rock sound, and at first proved most at home reproducing classical works, the Exposure did have inner strengths that underpinned its commitment to all types of music. If rhythm and timing were not quite in the Naim CD-2 class, the Exposure was still pretty special in this area. The player was good at defining the start and stop of notes, and while its pace wasn’t as upbeat as the Naim’s, it succeeded in generating its own sense of drive, and at a level that left much of the competition sounding rather sleepy.

All in all, by the finish I found the Exposure happy with all kinds of music. The lower midrange was a particular pleasure on both rock and classical, its excellently differentiated dynamics revealing of instrument type and musicianship. In the bass it proved to be nicely extended, with no hint of band-limiting or a “closed-in” effect. The Krell KAV-300ed certainly has greater bass slam and grips right down to the lowest frequencies (a Krell hallmark), but the Exposure approached the Krell in image scale and depth, and was actually a touch lighter on its toes rhythmically. The Exposure’s bass was “warmer” and a tad soft in the lowest register, but more than crisp enough in the mid and upper bass.

The Exposure’s soundstage was also well beyond its class, sounding wide and deep, very well focused, nicely layered, and achieving convincing perspectives. It was unusually good at conveying the sense of air around singers and instrumentalists, the soundstage appearing richly textured and open, and noticeably lacking dullness or veiling.

The Exposure’s midrange was nicely balanced, with natural and believable harmonic colors. Relatively high resolution was heard here; in my estimation, almost but not quite enough to justify a Class A rating in Stereophile’s “Recommended Components” listing. The player fared well enough in the treble, the sound again graced by that desirable lack of “forwardness” or aggression. It was nonetheless finely textured, with a subtle but wholly satisfactory level of grain.

You might not know it was there at all — or, if you did, whether it was what’s commonly found on digital recordings, if you were without a Krell KPS-20ii to help make the comparison — but a slight “sheen” was added to the treble. Interestingly, it didn’t draw attention to itself or spoil the overall result.

This result was a quality of balance and character that could construct large-scale, well-detailed soundstages that...
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rivalled some of the best players made. Moreover, this was achieved with a consistently upbeat, involving, and musically truthful foundation, a sound that you need make little excuse for. You could leave this player installed for long periods and not have to agonise over the absence of the usual audiophile references.

The Exposure proved compatible with a wide range of system components that I tried, stretching the capabilities (transparency and timing) of less expensive amplification and speakers, and making a surprisingly good effort to match some of the better electronics on hand. If not quite up to Krell FPB 600/Wilson WATT System 5 class, it was still punching hard at the Krell KAV-300/FPB 300/Wilson CUB/

The Exposure is an unusually musical CD player that has very good soundstaging abilities. WITT level—damn fine performance for a modest integrated CD player. In addition, it sounded particularly creamy with fine tube amplification. For those who follow my Hi-Fi News & Record Review scalings, the Exposure scored 35 points overall for sound quality. Enthusiasts will enjoy the improvements to be heard when this physically light-weight player is put on a good sound table, loaded with a Shakti Stone or two, and caressed by a clean mains supply.

Conclusion
Sometimes one can’t argue with how a designer achieves his or her aim. Instead we must stand back and recognize it for what it is. The Exposure is an unusually musical CD player that has very good soundstaging abilities, is qui-

The Exposure’s non-loop-feedback single-ended analog stages would make one anticipate some moderate distortion at peak level, and this was indeed present. I should also note that my first sample showed a barely-musically high-frequency tone in the right channel. The second sample, taken at random from the production line, was in the clear. Exposure will report back when they’ve checked this out; an out-of-spec DAC chip is suspected.

Track access was quick — 2.5 seconds for track 15 of the Sony test disc — while the gap error correction rated average, at 1.0mm for the usual Pierre Verany test set. Shock and vibration resistance were rated as “good,” despite the absence of significant isolating feet. This player ran quietly, with no transformer hum, and little noise save those intertrack relay clicks.

The player’s frequency response with a 10k ohm test loading was wide and flat (fig.1), with negligible ripple and just a hint of rolloff by 20kHz, this the -0.25dB point. De-emphasis showed a mild 0.5dB “dulling” in the mid-treble, recovering thereafter. Loaded by a severe 600 ohms, the full-level distortion rose a little, while the low-frequency -3dB point moved up from below 31Hz to 17Hz. Any loading down to 10k ohms should be just fine with this player, with little loss of bass extension. The two channels were very similar, matched to 0.4dB over much of the range, and 0.1dB different at 20kHz. There was no interchannel phase difference, and the output was close to minimum phase, absolute phase correct.

Channel separation was fine, crosstalk remaining below -100dB or so at low frequencies, increasing to a very good 90dB in the midrange and treble. The Exposure’s full-scale output was 0.12dB higher than the industry-standard 2V, generated from a very low 1.0 Ohm output impedance. (This figure includes the low-resistance output cable — perhaps the circuit features a trace of negative output impedance?)

At full level, the distortion on a single tone just bettered -80dB (0.01%), and was of a low-order analog-type variety. At -10dBFS, the distortion was quite normal at -79dB, 0.01%. Similar results were seen for the full-level high-frequency intermodulation, the 1kHz difference product reading -83.6dB (fig.2). Some mild noise was evident at below -100dB, but the fundamentals were quite clearly defined. However, the first difference-tone products with the 44.1kHz sample clock at 24.1kHz and 25.1kHz were only 3.3dB down. This is where the lower-cost filter implementation shows itself, but it could be argued that full-level, two-tone, high-frequency excitation rarely happens in music. On the other hand, a loud cymbal crash will dump multitone energy in this upper band, and the additional, if nominally inaudible, beat products will add to the workload for the system amplifier. Furthermore, such a beat tone might just lie on the resonance peak of a low-loss metal-dome tweeter, thus increasing its subjective audibility for younger, bat-eared listeners! The result did improve at a more realistic -10dBFS level. Here the 1kHz difference tone was held to a very satisfactory -88dB with rather fewer ultrasone products evident.

Fig.3 plots the spectrum of the Exposure’s spurious ultrasonic tones up to 88kHz for a -70dB dithered 1kHz tone (this is just visible at the left-hand edge

![Fig.1 Exposure CD player, frequency response (solid) and de-emphasis response (dashed) (0.25dB/vertical div.).](image1)

![Fig.2 Exposure CD player, HF intermodulation spectrum, DC-24kHz, 1920kHz at 0dBFS (log frequency scale, 10dB/vertical div.).](image2)

![Fig.3 Exposure CD player, spectrum of dithered 1kHz tone at -70dBFS. DC-88kHz, with noise and spurious (linear frequency scale, 16-bit data).](image3)
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etly neutral and yet dynamically resolving, has an involving and pacy character, and is convincing and satisfying in the long term.

If the Exposure were a good tube preamplifier, you could hardly argue with anything seen in its measurements: a wide bandwidth, quiet, with moderately low distortion. And as much as we value excellent low-level linearity in CD replay, and eulogize implied +20-bit linearity, there is still much more to digital sound quality. Here is a case in point: a player whose transfer function stumbles at around -80dB, far down on the aural sensitivity curve, and then recovers to a good linearity below -100dB (with the usual encode dither). One might expect its sound to be damaged in some way, indeed that it might be

**Without prejudice to any future listening, at the time of writing I feel that this is a high-ranking Class B contender.**

responsible for that slight, if musically satisfactory, treble "texture." Whatever, it fortunately didn't appreciably damage the overall sound, which stands comparison with many more costly and superbly linear players.

By now, the conclusion must be self-evident: Yes, I liked this moderately priced and economical player. I was intrigued by its simple single-ended transistor analog circuitry and the fine sound it made. Without prejudice to any future listening, at the time of writing I feel that this is a high-ranking Class B contender, truly commendable in its price class. Exposure's John Farlowe should be warmly congratulated on his first foray into digital replay: the Exposure CDP comes confidently recommended.

of the graph). There is nothing of significance to note here, save that ultrasonic spurious were better than 110dB down — more than fair enough— while the low-pass filtering accelerated beyond 83kHz.

Looking in more detail at the spectral analysis of the -70dB tone (fig.4), the odd-order distortion apparent is due to a mild kink in the DAC's transfer function. The third harmonic was at -35dB, that is, 105dB below peak level. There was rather less fifth and seventh harmonic present (at -113dB), after which lower levels of even-order harmonics reasserted themselves.

![Fig.4 Exposure CD player, spectrum of dithered 1kHz tone at -70dBFS, DC-10kHz, with noise and spurious (linear frequency scale, 16-bit data).](image)

![Fig.5 Exposure CD player, spectrum of dithered 1kHz tone at -90dBFS, DC-10kHz, with noise and spurious (linear frequency scale, 16-bit data).](image)

I repeated this analysis 20dB lower, at -90dB modulation (fig.5). Now some desirable second harmonic was present, and the third-harmonic residual had fallen to -110dB relative to full level. Sidebands were low in level, indicating very good clock stability, while the hash at the start of the trace was no more than a set of low-level, inaudible hum components at the 50Hz repetition rate of the UK mains supply. Total harmonic distortion at -90dB measured a satisfactory -15dB.

The Exposure's digital filter/DAC combination automatically mutes when it encounters a digital zero signal. Measuring the signal/noise ratio required use of the lowest-level tones on CBS's Ten Disc 1, by which artifice I got a modest 89dB unweighted figure, 89dB CCIR (1kHz) ARM-weighted, with 92dB A-weighted S/N ratios. A S/N ratio of better than 110dB is possible with some designs, so these figures were more comparable with a tube preamp than a solid-state IC circuit design. Hum itself was better than 105dB down.

The audio waveform showed no signs of premature compression on peak-level white noise, and RF leakage above 100kHz was well-controlled, better than 40dB down. Fig.6 charts the low-level linearity for the poorer of the two channels. It shows a fine result down to -75dBFS, but a moderate 2-3dB deviation by -85dB, and a recovery toward -105dB. Encroaching system noise is seen below that point. While this result was unexceptional, I don't think it's a cause for concern. Associated with the low-level linearity error, the Exposure's noise-modulation graph (fig.7), plotted for three levels of the low-frequency fundamental (-50, -70, and -90dB), shows some divergence for the lowest level tried. There's not much to choose between the others, and the overall result was quite typical. Little to report here.

Clearly, this was not one of the more linear CD players tested. Yet there was nothing that would warn, "Danger, you may hear this error!" In general, distortion was low and the channels were neutral and well balanced, having moderate noise and good separation. De-emphasis was tolerably accurate (and little used these days anyhow), while the output stage was something of a pile driver.

— Martin Colloms
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YOU CAN HEAR THE DIFFERENCE
Pass Aleph 1.2 monoblock power amplifier

Steven Stone

We all have biases. The trick is knowing your biases so they don’t get in your way. Mine are pretty obvious. I don’t like “fuzzy” gear that demands special care and feeding. I’m lazy — I want to just turn stuff on and begin listening. Perhaps that’s why I have a positive bias toward Nelson Pass’s designs. They’re reliable, untweaky, and usually sound good.

The Aleph 1.2 is the third piece of Pass Labs electronics I’ve lived with. I own a pair of Aleph 0 amplifiers, and I reviewed the Aleph P preamp in the February ’96 Stereophile. Because of my past experience with Pass gear, my expectations for the Pass Aleph 1.2 were stratospheric. But everybody knows that high expectations often lead to disappointment. Did the Aleph 1.2 deliver better sound along with its increased power? Let’s see what came to…pass.

Tech tour

The Aleph 1.2 is the largest amplifier from Pass Laboratories. It idles at 500W and delivers a maximum of 200W in single-ended class-A — the circuit topology of lowest efficiency. If properly designed, a single-ended amplifier exhibits primarily second- and even-order harmonic structure, similar to the transfer characteristic of air. The price paid for this performance is outrageously high idle current and heat dissipation, generally three to five times the output rating.

Like other Aleph-series amplifiers, the 1.2 is a large black box with fins on all four sides. A small blue light on the front peaks out to alert you to the amp’s “on” status. The rear of the amp has both balanced XLR and single-ended RCA inputs. A double pair of gold-plated five-way binding posts, an AC fuse receptacle, large on/off rocker switch, and an EIC AC connector complete the amp’s geography.

The Aleph 1.2 has very few parts in series with the signal path. The input signal travels through a resistor to the input MOSFET transistor, then through another resistor to the parallel output MOSFETs, with, finally, a power resistor before the loudspeaker. Active current sources separately bias the input and output stages.

The Aleph 1.2 is unlike the original Aleph 1 in two ways. First, it has only two gain stages instead of three. The amplifier does not have the auxiliary pulse circuitry that permitted the Aleph 1 to deliver very high currents into low-impedance loads. This may be a purer approach, but it doesn’t allow for greater power into loads below 4 ohms. The current-source biasing of the output stage is also new. It attempts to optimize the loadline of the single-ended output devices, hence lowering distortion. Nelson Pass’s current-source design is protected by a US patent application.

The Aleph 1.2 uses power MOSFETs for both of its gain stages. These MOSFETs were chosen because they have an optimal transfer curve for use in a single-ended class-A design. MOSFETs also allow high-current operation with low circuit complexity, delivering high performance in minimalist topologies. The input P-channel and output N-channel MOSFETs are carefully selected from the same manufacturing lot codes and matched within a tolerance of 2%. The input gain devices are pulse-rated at 8A, and are followed by output devices with pulse ratings of 50A each. The amplifier’s output stage has an overall power rating of 3.6kW, and the

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massive heatsinks are rated at 0.05°C per watt. During active operation, each output device is operating at only 14% of its rated power.

Resistors are precision metal-film throughout. The Aleph 1.2 is protected from overheating by a 75°C thermal switch, and from internal failure by a slow-blow fuse. The amplifier is powered by a toroidal transformer rated at 10 times the amplifier's output rating. This unregulated supply feeds the output transistors with a full-power ripple of about half a volt.

The Aleph 1.2 is equipped with a balanced input featuring a common-mode input noise rejection of -60dB, accomplished through a passive network tied directly into the input stage of the amplifier. There is no additional active input circuitry. Unbalanced inputs are accommodated by RCA connectors. On balanced inputs both positive and negative signals are used. The positive input signal goes to the gate of the positive-phase device of the input differential pair of MOSFETs and the negative input signal goes to the gate of the different pair's negative-phase device.

Ergonomics
Operating idiosyncrasies were few. There was a slight pop at the speakers when theamps were first turned on, but this was quieter than the turn-on transient from the Pass Aleph 0. Even though I used the balanced inputs, the amps had to be turned off before changing interconnects to avoid connection and disconnection noises. While it's always good practice to turn amps off before swapping cables of any kind, folks with balanced gear sometimes get blasé about it. Don't. The Alephs have enough juice to put out some serious transients.

Another caveat: Don't even think of trying to lift these amps without some thick gloves and at least one burly friend. There's no way to avoid gripping the heatsink fins, which feel like dull knives on bare flesh. At 130 lbs each, these are certainly not "one-person" amps.

Sound
The Pass Aleph 1.2 is a wonderful amp. A very low amplifier—it uses tons of electricity—but a glorious-sounding one nonetheless. Perhaps if you buy one you should also purchase some stock in your local electric utility. When your electric bill goes up 40% (as mine did), at least you can take some comfort in the fact that you're helping your electric company's bottom line.

What did the 1.2's juice-sucking prowess have to do with its sound? Simply, it sounded best when warm, and that took at least 45 minutes. You could leave it on all the time, but it'll cost you plenty. If, like me, you're "thrifty" (a polite way of saying "cheap"), you'll try to turn on the amps after an hour or so any serious listening.

A full set of measurements was run on the Pass Aleph 1.2 in unbalanced mode, with selected measurements repeated in balanced mode. Unless otherwise noted, the following measurements reflect unbalanced operation.

The 60-minute, 1/2-power preconditioning test left the Aleph 1.2's heatsinks very warm for several seconds, but not uncomfortable to touch. The amplifier's input impedance measured 10.3 kΩ unbalanced, 20.5 kΩ ohms balanced. Its voltage gain into 8 ohms is 23.1 dB (23.3 dB balanced), a little lower than most amplifiers. I wouldn't recommend the Aleph 1.2 for use with "passive" preamps in most systems, unless your room is small, your playback-level tastes modest, and/or your loudspeakers very sensitive.

The amplifier is noninverting (pin 2 positive in balanced mode). Its S/N ratio measured 83.6 dB from 22 Hz to 22 kHz, 80.9 dB from 10 Hz to 500 kHz, and 93.7 dB A-weighted. (The balanced S/N measured about 6 dB worse unweighted, and about 8 dB worse A-weighted.) The output impedance remained at or below a low 0.085 ohms at 1 kHz and 20 Hz, increasing to 0.09 ohms at 8 ohms at 20 kHz. DC offset at the outputs measured 16.2 mV.

Fig.1 shows the Pass Aleph 1.2's frequency response. The unbalanced response is slightly flatter than the balanced, and the effect of our simulated real load is essentially negligible. The 10 kHz squarewave response in fig.2 has a very fast rise-time and only a small rounding of the leading edge. The 1 kHz squarewave response (not shown) is close to ideal.

The distortion curves in fig.3 show quite low THD across much of the band, rising only at higher frequencies as the design runs out of open-loop

Stereophile, November 1997
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It wasn't their harmonic balance that changed as the 1.2s warmed up, but their dimensional capabilities. There was a recurring moment, about 35 to 45 minutes from startup, when the image just blossomed — from decent solid-state soundstaging to "Oh my God; they just showed me the magic." Pass Aleph 0s also take at least 30 minutes to bloom, but their metamorphosis isn't nearly as dramatic.

So they're hot, they're happening, and they're pretty damn awesome. But exactly what qualities make the Aleph 1.2s so sonically stupendous? My listening notes include copious references to the 1.2's lack of any sort of electronic signature. This is a midrange to die for — clean without a trace of an electronic signature. In addition to its nonelectronic nature, the 1.2 also has unflappable suavity. Nothing ruffles its cahn. Even the most dynamic material in my arsenal, like the JG11/SS recording of the 1812 Overture complete with howitzers, didn't rock the 1.2's world. This sense of ease is something the 1.2 shares with other big power amplifiers; but unlike most big solid-state power amps, the 1.2's lack of electronic artifacts is special.

Up against the Pass Aleph 0
My first compare-and-contrast exercise pitted the Aleph 1.2 against the smaller, $8000/pair Aleph 0. While the amps shared certain family traits, they did not sound identical. The 1.2 had a certain case, regardless of the music's demands, that eluded the 0. Paradoxically, the Aleph 0s did have a slightly more specific soundstage focus, but that precision broke down when they were dynamically stressed. Also, the Aleph 0 seemed to be faster-sounding on dynamic transients. The horns on Paquito D'Rivera's Grammy-winning Portraits of Cuba (Chesky JD145) hit faster, but got a wee bit woolly during their crescendos.

The Aleph 1.2s did project a slightly larger soundstage with a bit better depth rendition. On LeeAnn Rimes's Blue, the wall of sound behind her was farther back through the 1.2s. With sensitive speakers (more sensitive than the 91dB/W Dunlavs), the Aleph 0s could probably maintain their superior dynamic immediacy and focus. In my main system, the 1.2's overall dynamic ease added substantially to the listening experience, tipping the scales in its favor.

### Measurements

There is nothing at these low power levels that gives away the Pass's single-ended nature. The waveform in fig.4 indicates a heavy second-harmonic content — which was also true at 8 and 2 ohms (not shown).

The 1kHz, THD+noise vs output power sweeps are shown in fig.5. Note the increase in distortion at lower impedances in the mid-power range; the "double knee" character here is not common with conventional solid-state power amplifiers. The discrete clipping levels (for 1% THD+noise) at this frequency were inconsequentially below spec. at 1971W into 8 ohms (22.9dBW), 263.9W into 4 ohms (21.2dBW), and 132W into 2 ohms (15.2dBW). The voltage of the power line was 113-114V during these measurements. At 117V, the amplifier will probably meet its power specification.

A plot showing the output spectrum resulting from a 50Hz input (201W into 4 ohms) is shown in fig.6. The second harmonic is at -50dB (0.3%), the third at -52dB (0.25%). Because of the Aleph 1.2's high power output and the limitations of our simulated test load, I didn't run a 50Hz simulated-test-load spectrum.

Fig.7 shows a similar spectral plot, here the result of a combined 19+20kHz signal. The residual indicates the sum and difference tones created by the amplifier with these frequencies at the input — in other words, the intermodulation between these two tones. The output of the amplifier in fig.7 was 39.5W into 8 ohms — the highest output possible with this input signal before clipping was evident on a 'scope trace. The IM is -47dB (about 0.45%) at 18kHz, -55dB (about 0.17%) at 17kHz, and -45dB (about 0.6%) at 1kHz. At 25.7W into 4 ohms (again, just prior to clipping) the graph (not shown) looks similar, though the corresponding distortion is somewhat higher: -44dB (about 0.6%) at 18kHz, -50dB (0.3%) at 17kHz, and -41dB (0.9%) at 1kHz.

All of these distortion-spectrum results — 50Hz or 19+20kHz — are higher than we normally see on the test bench from the best-measuring push-pull solid-state amplifiers. Nevertheless, the other results here are very good, and far outstrip those of any single-ended tube amplifier I have yet measured.

— Thomas J. Norton

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**Fig.5** Pass Labs Aleph 1.2, distortion (%) vs output power into (from bottom to top at 10V): 8 ohms, 4 ohms, and 2 ohms.

**Fig.6** Pass Labs Aleph 1.2, spectrum of 50Hz sinewave, DC-1kHz, at 201W into 4 ohms (linear frequency scale).

**Fig.7** Pass Labs Aleph 1.2, HF intermodulation spectrum, DC-22kHz, 19+20kHz at 39.5W into 8 ohms (linear frequency scale).
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**Boulder comparisons**
I also spent several days comparing the Aleph 1.2 to my reference amplifier—the $9900/pair Boulder 500AE monoblock. Both models share the ability to produce copious amounts of volume without stress, but each excels in dramatically different sonic parameters. My JGH/SS DATs of the Young Philharmonic Orchestra of Munich performing in Boulder's Chautauqua Auditorium had superior three-dimensionality through the Alephs. Car-engine noise outside the hall sounded much farther away (the Chautauqua is a shed rather than an enclosed auditorium, so noise from “outside” is far more noticeable than on a commercial release). However, through the Boulder 500AEs these low-level low-frequency noises had more detail and more specificity.

While the orchestra sounded harmonically more natural with the Pass amps, with the Boulders I was able to pick out individual parts more rapidly. Also, the Boulders more readily revealed problems in intonation and ensemble. The Pass amps were seductive; instead of being bothered by these little mistakes, I found myself wrapped up in the fabric of the music. If I listened carefully I could hear the same mistakes that were so obvious through the Boulders, but it’s far easier to overlook the blemishes on a few trees when a redwood forest looks so magnificent.

While both amps produced images of similar size, the Alephs did a superior job of fleshing out the three-dimensional quality of musical instruments. Instead of the pinpoint lateral specificity of the 500AEs, the Pass amps produced a slightly more diffuse but multidimensional instrument location. On a recent JGH/SS recording of Engelbert Humperdinck’s Hänsel und Gretel, singers move around the stage as they sing. The Pass captured the way their voices bounce off the floor and sidewalls with a bit more spatial accuracy than the Boulders. As the singers move, they often turn their heads away from the single stereo M/S pair of microphones flown over the front of the stage. The Pass amps’ spatial acuity made it possible to tell which way the singers’ heads were turned. Through the Boulders it was harder to make such a determination.

On dense pop mixes like “Orphan Girl,” from Gillian Welch’s Revival CD (produced by T-Bone Burnett, Almo Sounds AMSD-80006), the Boulder amps did a superior job of differentiating each instrument’s specific part; the Alephs delineated the various dimensional layers of the mix with better specificity. “Orphan Girl” is a paradoxical recording: At first it seems to be a simple two-voices-and-two-guitars acoustic recording. Actually, it’s a dense arrangement with six-string bass, electric guitars, and multiple Optigan tracks. The Aleph had the ability to locate each instrument with greater three-dimensional precision, while the Boulder individualized each instrument’s particular lines with greater acuity.

This is akin to the difference between tube and solid-state electronics: Tubes often do better at re-creating three-dimensional space, while solid-state amps excel at rendering inner details. The Pass 1.2 was a very “tubey” amp in the way it handled dimensionality—it got the spaces right. While it was easier to pull a mix apart through the Boulder amp, through the Pass I could sit back and luxuriate in its dimensional complexity.

There were noticeable differences between these two amps at the fre-

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**Setup and System**

Because the Pass Aleph 1.2s weigh so much, I didn’t try to herd them into my video room, but instead installed them in my main large room (see Vol.19 No.8, p.117 for photographs). They were saddled with the Dunlavy Signature SC-VI loudspeakers. I tried a passel of power cables—Aural Symphonics Missing Link Cubed Gen.III and Synergistic Research RC/Master coupler (serial numbers 555 and 556, I kid you not). I heard no difference between the two (like Betty and Sue in Pat Sky’s version of “Cocaine”), so I settled on the Aural Symphonic AC cables because they were shorter, and easier to keep out of harm’s way. For speaker cabling I lassoed some Aural Symphonics Gen.II, Discovery Signature, Audio Magic Sorcerer, and Synergistic Research Resolution. I settled on Audio Magic. By and large the cables sounded remarkably similar, but with this particular combo the image seemed to lock in slightly better.

My analog source was a VPI TNT III turntable with the outboard flywheel on a Bright Star base and Townshend Seismic Sinker. I used the Graham 1.5 TC and Clearaudio/Souther TQ-1 tonearms. Cartridges on hand included the van den Hul MC-1 Super, Dynavector XX-1, Clearaudio Veritas, and Fidelity Research/van den Hul FR-1. Discovery Plus Four cable connected the Clearaudio arm and the phono preamp as well as the phono preamp and the line-level preamp.

The digital front-end was a PS Audio Lambda II CD drive, C.E.C. TL 2 CD drive, and Sony D-8 DATman connected via coaxial, AES/EBU, TosLink, and AT&T optical connectors to an EAD-9000 III D/A. Digital cables were Mod Squad Wonder Link 1 coaxial, Audio Magic Sorcerer coaxial, TARA Labs RSC master AES/EBU, Illuminati RCA coaxial and AES/EBU, Aural Symphonics Digital Statement cable in both RCA coaxial and AT&T optical, AudioQuest and Sony TosLink connectors, and fiber-optic cable from Parasound with EIAJ connections.

Preamps sometimes used in the system were the Carver Lightspeed and Pass Aleph P line-level units, with Vendetta SCP-2C2 outboard phono unit. Other Power amps in-house were the Boulder 500AE and Pass Aleph 0 monoblocks. I used Discovery Plus Four and Audio-Magic Sorcerer balanced XLR interconnects between the preamp or direct digital source and the power amplifiers.

Other accessories included RoomTunes CornerTunes, EchoTunes, and Ceiling Clouds, Acoustic Sciences Tube Traps, Arciet Levitation stand, Bright Star Audio Big Rock bases (for the power amps), Shakti Stone, VPI Magic Bricks, Fluxbuster, PAD break-in disk, Noise-Trapper Power Strip, Power Science Foundation AC line-conditioner, AudioQuest record brush, Gryphon Excellor conditioning tool, Nitty Gritty record-cleaning machine, RadioShack Sound Pressure Meter, Kleenmaster Brilliance CD cleaner, and a 1972 Gibson ES-175 sunburst arch-top electric guitar. —Steven Stone

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1 Most of my critical listening is done sans preamps. I just run a balanced line from the back of the EAD-9000 III D/A directly into the amplifiers.
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Boulder had 500AE just archetypal Boulder person," Geffen amps...ous rendition, but on most pop and commercial recordings the Pass's slightly mellifluous, more reticent top end was very welcome. Again, the differences between archetypal solid-state and tube-amp sounds come to mind. If you're a "tube person," you'll feel right at home with the Pass 1.2's top-end rendition. Bass through the Pass had exemplary pitch definition and "tunefulness," but lacked the dynamic drive of the Boulder amp. On Rickie Lee Jones's "Beat Angels" (Traffic from Paradise, Geffen GEFD-24602), John Leftwich's acoustic bass lines were more melodious with the Pass, but the Boulder amps transmitted more energy and dynamic life. If forced to choose which rendition was more accurate, I'd say "Both." Ideally, bass rendition should be melodious and dynamic, but these two amps demonstrate that perfection is still a goal, not a reality. The Pass Aleph 1.2 is more dynamically relaxed than the Boulder. Those attacks on Portraits of Cuba were just that — aggressive, with more dynamic energy through the 500AE amps. Through the Alephs, everything was just a bit softer, with less edge and dynamic punch. Dynamic peaks also seemed louder through the Boulders, with superior punch. While the Aleph lacked a bit of dynamic contrast, there was a natural-sounding harmonic envelope to the horn sound, especially the decay. Once more, the absence of any sort of electronic edge to the Pass sound created a convincing illusion of "realness" that was hard to ignore and easy to love. Which is right? Once more, the elusive ideal is the Boulder's dynamic energy coupled with the Pass's timbral finesse. On John Gorka's "Can't Make Up My Mind" (Between Five and Seven, High Street 10351-2), producer-gui-
tarist John Jennings' Martin Back-packer guitar solos had a more precise transient attack through the Boulders. The Pass amps transmitted a softer, more "wooden" body tone. Once again, this begged the question: "Which is right?" Like Gorka, I can't make up my mind which is "better" — I value the strengths of each amp. Might as well compare apples and oranges. If I just wanted to enjoy the music, the Pass's natural timbre was wickedly seductive. If I needed to analyze a recording, the Boulder's superb resolution made it the perfect tool for the job. The 500AE is the ultimate pro-audio workhorse amp, while the Pass is a preeminent recreational amplifier. It's unfortunate that I no longer have a pair of the Manley Reference 240 monos that I reviewed in May '96 (Vol.19 No.5, p.163) in my possession — comparisons to the Pass Aleph 1.2s could have filled up at least another page. Both amps excel at portraying the emotion and magic in music. The Virgo in me wonders just how close the Pass can come to the Manley's superb three-dimensionality. I also wonder if the Manley could possibly match the Pass's suavity and ease. Pass or fail? So, did the Pass Aleph 1.2 live up to my exalted expectations? Perhaps that's more my problem than yours — expectations get in the way of accurate assessments. The Aleph 1.2 is certainly the most musically seductive high-power amplifier I've ever experienced. It's capable of turning any attempt at serious left-brain listening into a glorious right-brain bacchanalia. For those audiophiles convinced that only tubes can permit excursions into musical ecstasy, the Pass 1.2 may have them boogying in their kits. If I listened to music solely for pleasure, I'd buy a pair of 12s in a heartbeat. Like superior tube amplifiers, the Aleph 1.2's colorations are subtractive and superbly musical. Like the Pass Aleph 0, which Dick Olsher called "the solid-state amplifier of the decade" (StereoPhile, March '95, p.88), the Aleph 1.2 makes it possible for audiophiles to have the best of all worlds: musicality, dimensionality, brawn, and low maintenance, all in two rather lightweight black boxes. If you purchase any high-power tube amp without auditioning an Aleph 1.2, you've failed to fully investigate your options. The Pass Aleph 1.2 is a class-A solid-state amp that reduces the gap between silicon and glass from a yawning chasm to a thin, glowing blue line.
THE EPITOME OF TRUTH

(Pictured Above, from Left to Center: Dynaudio Consequence Loudspeaker, $25,000.00 per pair; Dynaudio Arbiter Monoblock Amplifier, $200,000.00 per pair; Dynaudio Arbiter Preamplifier, $96,000.00)

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Transcendent T8 OTL monoblock power amplifier

Jonathan Scull

Just who does Bruce Rozenblit think he is? And why is he saying those things about the late Julius Futterman? Rozenblit, relying heavily for guidance on his Electrical Engineering degree, has crafted an OTL (output-transformerless) amplifier that flies in the face of contemporary design dogma. To hear Bruce tell it, he’s tamed the breed — this is how OTLs should have been done to start with, Futterman notwithstanding.

Ah yes, Futterman — the looming father-figure of contemporary OTL designs. Most audiophiles have heard of Father Futterman’s amplifiers and their reputation for instability and self-immolation. Yet the idea of eliminating the output transformer and driving the speakers right off the power tubes is a compelling one. Of course, nothing’s without cost. OTLs are usually powered by a forest of hot-running tubes, such as the triple-nippled Russian 6C33C, necessary to reduce the output impedance to give a reasonable interface with the speakers.

Nevertheless, Futterman-type designs have a difficult time driving moving-coil loudspeakers. On typical dynamic designs (4 to 6 ohms, three-point-something or lower in the bass) they can sound grainy, lightweight, thin, and bloated on the bottom end. As a result, OTLs are often partnered with electrostatics, which require volume but not much current. This would be ideal if not for the punishingly low impedance of many ’stats at very high frequencies; OTLs make less power as the impedance load drops. (The T8 monoblocks put out 80Wpc into 8 ohms, dropping to 50Wpc into 4 ohms.)

Obviating these concerns, Rozenblit asserts that his design works with many “real world” dynamic speakers. Indeed, he claims that most of his customers use commonly available moving-coils. (See the accompanying interview for details.) In any case, as we’d had such success driving the Joseph Audio RM-50s with the Graaf GM 200 OTL, we decided to stick with the Josephs. (For the full hoopy-scoopy on the RM-50s, see the “Speaker Matters” sidebar in September’s review of the Graaf.) Whatever the T8’s capabilities, there’s nothing like a high, reasonably flat impedance curve to keep an OTL happy and on the boil.

We’re hot, but we’re cool

Speaking of cooking, OTLs traditionally run murderously hot, no doubt stressing the electronics to some extent. (Al-
ingotlike gold logo up front, I found the boxy T8 rather uninspiring to gaze upon. In fact, the overall build—made in Missouri—looks rather crude, especially in comparison to the elegant and exquisitely appointed Graaf GM 200 (at more than twice the price, it's fair to point out). But the T8 isn't homely just for the sake of it. Both the stereo and monoblock versions use the same enclosure, amp circuitry, and power supplies. By simply changing out the various sub-chassis, stereo units can be upgraded to monoblock specs in a jiffy. How can I criticize a small manufacturer for creating an intelligent, easy-to-build and service amplifier? I can live with it. Repeat after me: *It's the sound that counts...*

**Tubes & bias, emotional & otherwise**

The T8 monoblock uses a single 12AX7 for the input gain stage. A pair of 12AU7s follow: the first splits the phase, the second functions as a cathode follower. Most OTLs these days (and several push-pull designs) make excellent use of the MIG-sourced Russian 6C33C. Rozenblit much prefers the Svetlana EL-509, finding it a more consistent, reliable, sweeter-sounding output tube. The 509's plate rating is 35W. At idle, the T8 loads them at a cool-running 10–15W, thus permitting the "thermal reserve" needed for Ellington or Elgar. If pushed, the plates will dissipate a hefty 70–75W of thermal energy. Of course, peak requirements of a typical music signal are usually short in duration. So while the T8s become rather toasty when pumping out Beck or Mahler, they handle big musical moments with aplomb.

The rear panel houses line- and output-stage fuses, a standard IEC mains in, Edison-Price binding posts, and RCA input jacks. There's also a simple bias-control adjuster augmented with a cute yellow voltmeter packed with the amps. Five minutes after power-on you're looking for a reading of less than 50mV across the speaker terminals (no signal, speaker cables attached). Check it again after an hour. After the tubes have run in and stabilized, the manual suggests leaving obsessiveness behind and checking the bias only every few months.

**System**

The Transcendent T8 OTLs were dropped into essentially the same system as that used in the Graaf GM 200 OTL review. The Joseph Audio RM-50s sounded best set up on a combo of Shun Mook Diamond Resonators left 'n' right rear, with a single Audipoint up front. We placed Harmonix RF-56 Tuning Bases on their sides—at woof level—to excellent effect, and tweaked the soundstage with a trio of Mpingo Discs on top. I made extensive use of both Shun Mook and Harmonix footers throughout the system.

Digital front-ends included the suave Ensemble Dicronos, the ever-bloomin' Forsell Air Reference, and YBA's seduc-

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**Measurements**

Because of the high-power limitations of the Transcendent OTL monoblock's tubes, its manufacturer recommended against a high-power pretest. Instead, I warmed up the amplifier at 1W for one hour, following which I tweaked the bias in accordance with the directions in the owner's manual. The amplifier runs quite warm, but not unexpectedly so for a tube amplifier.

The Transcendent's input impedance measured 115k ohms, its voltage gain a very low 20dB. I strongly recommend that, if your loudspeakers are of average sensitivity, you pair this amplifier with a preamp having at least 12dB of gain. (I do not recommend a "passive" preamp with the Transcendent.)

The amplifier was noninverting. Its S/N Ratio measured 69.5dB from 22Hz to 22kHz, 69.4dB from 10Hz to 50kHz, and 82dB A-weighted. The output impedance was at or below 0.37 ohms at 1kHz and 20Hz, increasing to 0.47 ohms into a 4-ohm load at 20kHz. This is a lower output impedance than that of most tube amplifiers with transformers. DC offset at the outputs fluctuated considerably, and while it remained under 10mV much of the time, there were occasional instantaneous peaks to above 60mV—still not high enough to be of concern.

Fig.1 shows the Transcendent OTL's frequency response. Note that the high-frequency response falls off more rapidly into 4 ohms than into 8, though the difference in the audible range is of little significance. The response deviation into our simulated real load is small, though it may be barely audible.

The 10kHz squarewave response in fig.2 has a good risetime, though there's a single half-cycle of damped overshoot visible. This is also present as a just-apparent spike in the 1kHz squarewave (not shown). The distortion curves in fig.3 show reasonably good linearity across much of the frequency band, though the amplifier is clearly starting to become uncomfortable into 2 ohms. The distortion waveform in fig.4 shows significant amounts of both second and third harmonic. Into 8 ohms, the second harmonic is clearly primary, and into 2 ohms, the third (neither shown) —more indications that you should avoid very-low-impedance loads with the Transcendent.

The 1kHz, THD+noise vs input power sweeps in fig.5 also show the amplifier's preference for loads of higher impedance. Indeed, if we were to use 1% as a clipping reference, the Transcendent barely puts out just under 4W

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tive CD1 Blue Laser. Analog revolved on our Flywheeled Forsell Air Force One in company with a van den Hul Grasshopper IV and derivative Symphonic Line RG-8, as well as Clearaudio’s Insider. (A fresh run of green, minty-fresh dental floss transferred the “moving energy” of the flywheel to the Forsell’s optional, heavier platter.)

In my experience, XLO Signature phono cable still reigns supreme, as do the Illuminati D-60 and Ensemble Digiault data-links on the digital side. Harmonix and MIT Digital Reference links also made for subtle changes in soundstaging and tonal balance.

For most of the review period I made use of Synergistic Research’s Designer’s Reference line-level interconnect, its vivid green jacketing setting off the fresh floss! I also enjoyed the occasional foray into MIT-350 and Harmonix HS-101 Harmonic Strings interconnect.

I began with the bi-wire Cardas Golden Cross speaker-cable arrangement that had proved so effective with the Graaf, but shortly thereafter found a wonderfully synergistic match between the T8s and bi-wire Goertz Alpha-Core MI Ag speaker cables.

The VK-5i and VK-P10 phono stage made a truly delightful match with the Transcendents.

The only major change was in the preamp department. I began auditioning the T8s with the stunning YBA 6 Chassis — review to appear next month. It was just fantastic. Listening to the all-YBA front-end produced a sound of breathtaking beauty. The refinement pouring out of the system flabbergasted me. Of course, the CD1 was less detailed (but still charmingly romantic) in comparison to the neutral and extended Ensemble gear or the Forsell front-end. (The Forsell fits between: more bloom than the Ensemble, more detail than the YBA. But each offers, in its own way, true Class A sound.)

But the YBA 6 Chassis weighs in at a breathtaking $19k, making it a rather unlikely match with the $6995 Transcendent monos ($3595 for a single stereo unit, which puts out 25Wpc into 8 ohms, 15Wpc into 4 ohms). Getting real, I set up the BAT VK5i line-level preamp. The VK-5i and VK-P10 phono stage made a truly delightful match with the Transcendents. (Sure, that’s $4k for the 5i and $4k again for the P10, but both BAT and YBA make less expensive components with similar “house sound.”) The BAT combo sounded more juicy, liquid, breathing, and “emotional” than the French preamp. Images were a touch rounder and more immediately vivid (and so more palpable) than with the

with a 2 ohm load at 1kHz. As we often do with tube amplifiers, however, I’ve chosen here to define the 1kHz discrete clipping levels as 3% THD+Noise. The latter are at 41.3W (16.2dBW) at 8 ohms, 32.5W (12.1dBW) at 4 ohms, and 17.8W (6.5dBW) at 2 ohms. The voltage of the power line was 115–117V during these measurements.

I rechecked these figures the next day and obtained slightly higher readings: 44W into 8 ohms (116V), 38.8W into 4 ohms (116V), and 21.5W into 2 ohms (115V). The only explanation I can offer for the difference is the fact that the amplifier was operating for just over an hour (mostly idle warmup) prior to the clipping measurements on day 2, and for about 3 hours (idle warmup plus taking most of the above measurements) before the clipping test on day 1.

A plot showing the output spectrum resulting from a 50Hz input (20.4W into 4 ohms) is shown in Fig.6. The second harmonic here is at −48dB (0.4%), the third at −40dB (0.8%). At 18.6V into our simulated real load, the corresponding results (not shown) were −51dB (about 0.6%) and −51dB (about 0.3%), respectively. Fig.7 shows the IM spectrum for a 19+20kHz input at 6.1W output into an 8 ohm load. This is the maximum output possible with this input signal into this load prior to visible clipping (observed on a 'scope). Transcendent says that, for sonic reasons, they deliberately limit the output power of the amplifier at higher frequencies. The IM here is −31dB (about 3%) at 18kHz, −42dB (0.8%) at 17kHz, and −26dB (about 4.5%) at 1kHz. At 4.2W into 4 ohms (again, just prior to clipping), not shown, the 19+20kHz IM spectrum looks similar, and the corresponding distortion is just slightly higher (1–2dB).

The test-bench results here are mixed, the T8’s relatively mediocre IM distortion counterbalanced by its low (for a tube amplifier) output impedance and good, low-power THD+noise.

— Thomas J. Norton

Fig.4 Transcendent T8, 1kHz waveform at 2W into 4 ohms (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

Fig.5 Transcendent T8, distortion (%) vs output power into (from bottom to top at 10W): 8 ohms, 4 ohms, and 2 ohms.

Fig.6 Transcendent T8, spectrum of 50Hz sinewave, DC−1kHz, at 20.4W into 4 ohms (linear frequency scale).

Fig.7 Transcendent T8, HF intermodulation spectrum, DC−22kHz, 19+20kHz at 6.1W into 8 ohms (linear frequency scale).
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ultra-aesthete YBA preamp. And while the BAT didn't develop the YBA's utterly transparent, limitless view deep into the soundstage, it threw out a delightfully large and airy acoustic that allowed around me in the Ribbon Chair to perfectly enjoyable effect.

The only caution here was the T8's rather low overall gain — the preamp had to be run up near the top of its volume range. And we had to switch the VK-P10 into its high-gain mode. If you've got a relatively quiet, high-gain preamp like the BAT, you'll have no real problem with overall volume levels.

The burning bush
In the context of this review, I'll give, for the moment, OTLs (that I've heard) and some of the best single-ended amps (ditto) the credit for having a ton end that's more open, alive, nuanced, detailed, and communicative than any push-pull or solid-state nutcracker has ever managed (ouch). I'm still a push-pull kinda guy, and I'll likely remain so. I'm not throwing everything out the window for single-ended or OTL technology. Yet... the wonders of this "job" are those special moments of what I call high-end cognation, when the music enters the mind and polarizes the soul. In this way, the Transcendents spoke eloquently.

The T8 may appear rather crudely constructed, but its sound was at all times refinement personified. How to adequately describe that special openness in the highs that OTLs seem to embody? The Graf can certainly has it, seductive, ravishing thing it is. And the T8s had it, if in a slightly different way. The first time I heard such delicate, lovely "light from within" — especially evident on female vocals — was during our single-ended sprectum last year. With appropriate speakers, the single-ended experience can be musically compelling, even (especially?) in the context of contemporary high-end audio. But the T8s' upper range wasn't lit so brightly from within as those of the single-ended/OTL amps we've heard. Rather, its musical light shone from deep inside, the flame itself glimpsed only beneath the glow. It smoldered from within, you might say.

In this way, the T8s were entirely more self-revealing about their presentation of the upper frequencies than the Graf, which flaunts a more glamorous, ritzy top end. (The Graf can splash a bit if overdriven, something the Transcendents never did.) This wondrous delicacy in the highs (and throughout the rest of the frequency band) was born of extremely fine detail existing down near and interlaced into the noise floor. Repeatedly, as I listened to many LPs and even CDs, I heard the Transcendents "grain down" to the level of the master tape. This was a subtle effect; it actually took some time to fully appreciate. In fact, some listeners thought, at first, that the T8s were slightly rolled-off in the highs. This was not so. Checking one recording after another while listening for various high-frequency cues, I realized... they're in there. The treble was presented natural-

Who does Bruce Rozenblit think he is?

Jonathan Scull: The question I want to ask is, Just who do you think you are?

Bruce Rozenblit: [laughs]

Scull: Just kidding. But really, here you are claiming to have fixed all the problems in Futterman's OTL design.

Rozenblit: Yes, exactly.

Scull: Well, that takes balls...

Rozenblit: Yes.

Scull: What defining moment launched your audio-building career?

Rozenblit: Well, years ago I picked up a little EICO tube amp, their version of the Dynaco Stereo 70. I'd never even heard tubes before, and it was just unbelievable.

Scull: You weren't even a tube guy, right?

Rozenblit: Right. I'd never heard tubes before, and thought it was a ridiculous waste of time to even think about such old technology. But when I heard them for the first time, I said omGad! And then Glass Audio magazine came along, and that had a lot to do with it too.

Scull: The question must be asked, Bruce: As fine an idea as your OTL circuit may be, why didn't anyone think of it before?

Rozenblit: I'm a degreed electrical engineer, okay? That means a hell of a lot. There aren't very many people in audio these days who can say that.

Scull: Well, perhaps having an EE degree isn't all upside. It also means that you've been indoctrinated, if you know what I mean.

Rozenblit: Well, it gave me the tools to learn. Futterman accomplished some wonderful things, and I have great respect for him. But there are probably a thousand guys who could have done what I did if they'd just applied themselves to it.

I'll tell you what I think — a lot of it was this incredible infatuation with the Futterman mystique. Like he was some kind of a God. And he did get some of it right. When you walk into a design project with that kind of blind allegiance to a cause, it's like those right-wing fanatics. You know, no matter what you tell them, they're going to believe what they want to believe. They're blinded to what's really going on. And I think that had a lot to do with it too. It's about open-mindedness. It's about being creative. It's about letting yourself go and trusting your intuition.

Scull: Well, your design obviously works...

Rozenblit: Right. I've got thousands of hours of field time on the amps, and nothing's ever happened. Nobody's ever damaged a speaker and none have blown up.

Scull: Since you're running in low-bias class-AB, what about crossover notch distortion? Isn't that why everybody pushes their designs into class-A — to avoid the zero crossing point?

Rozenblit: Yeah, that's what they say.

Scull: Well?

Rozenblit: Well, you have to take an opposite tack to get an OTL to work. That's one of the tenets of the design.

Scull: Don't get Zen on us, Bruce.

Rozenblit: [laughs] You have to approach this thing with a blank slate. What do I have to do to make it work? I knew I had to get the heat down because OTLs were just burn-
ly, much like what I hear at live music events. The extraordinary level of un-
forced detail, tonal shading, and "color depth" put many a push-pull design to
shame. The sense of openness was much enhanced by a superbly natural,
fast-paced presentation — not blazingly fast, but rather with a speed that pow-
ered the music along with natural timing and transient snap.

Paradoxically, to fully understand the highs, we have to look at the midrange
and below. Somewhere around the mid-lower midrange lies what I'd char-
acterize as a powerband hinge of sorts. From there to the bottom the T8s
seemed to shelf back slightly in their power response. This didn't sound dis-
continuous or unmusical in any way. On the contrary.

Another way to characterize it would be to say that the amps possessed great
transparency above, and especially below, the "hinge." We'll look at the bass in
more detail shortly, but the important element here was the effect on voices:
female and especially male vocals sounded fundamentally less chesty and — to
use once again the most descriptive word for the T8s — natural.

Importantly, this didn't create a dis-
embodied "mouth in space" effect, but there was definitely less of the heavy,
chesty stuff coming through. A fine example of this is on the vinyl of
Cassandra Wilson's New Moon Daughter
(Blue Note 8 37183 1). Now New Moon
is anything but a high-end recording. In
fact, I've always found it to be rather

The soundstage is so
huge and acoustic,
so breathing and liquid,
so tight and fast,
so open in the highs . . . it's really a transcendent
experience.

murky and overblown. But Cassandra's
music is compelling, her voice and
range amazing. If you cue up "Strange
Fruit," there's plenty of time — unlike with the CD — to run back to the
listening chair to catch the well-known
match ignition at the beginning of the
piece. My notes: "Smokin'! The sound-
stage is so huge and acoustic, so breath-
ing and liquid, so tight and fast, so open
in the highs . . . it's really a transcendent
experience." (Had to say that at least once
in the review.) I thought — as I did listening
to a number of female vocal record-
ings — that I'd never had it so good.

This lack of chestiness worked won-
ders on the boys as well. I listened to my
two favorite songs on vinyl: "Moon
Maiden" on The Intimate Ellington
(Pablo 2310-787) and "Follow Me" by Sinatra
on Francis A. & Edward K. (Reprise
FS-1024). Really, it was captivating. Running
differently to the amps with the
BAT phono front-end, I tapped out the
following as I listened: "That's it! They're
here! The natural, light, open quality of
their voices is incredible. The sound
envelops me in an almost physical way. I
can't break away to dissect the sound, it's
just washing over me in a wave of plea-
sure. I think I'm having an eargasm."

This lighter, transparent touch in the
lower midrange and down affected the
entire midrange, of course. It was always . . .
just right. It didn't rush me, as can the
Graaf or the single-ended amps we
 auditioned — but on those occasions
when I turned my attention to it, I
never found it wanting.

1 I may be missing something here. Classic cross-
over distortion, which occurs when one set of out-
put devices in a class-B design hands over to the
other, is constant and is therefore an increasing pro-
portion of the signal as that signal reduces in level. It is
thus at its smallest, expressed as a percentage, when
the amplifier is on the verge of clipping. Perhaps Bruce
Rozenblit would like to expand on this topic in a "Manufac-
turer's Comment" letter. — JA

design. It's based on a grounded-grid
gain stage. It's very simple and uses just
three tubes. It's going to come out at
$1395, and I hope to have it out by the
fall.

Scull: And you've written a tube book?
Rozenblit: Yes, it came out June
15th — The Beginner's Guide to Tube
Audio Design. It's for audiophiles and
hobbyists who want to learn how tube
circuits work, and even how to design
their own. It's written in very simple,
easy-to-read language. There are for-
mulas in it, but it's all fully explained.

Scull: And where would that be available?
Rozenblit: It's being published by
Audio Amateur Publications, and it's
available through all the usual audio-
phile channels for $24.95. It's a small
book, about 100 pages, so you don't
get bogged down with a lot of hazzar.
It's very straightforward.

Scull: So interested parties can call, fax, or
e-mail to get your white paper on OTLs?
Rozenblit: Yup, people do it all the
time. And I love talking to them. They
like talking to the designer — it gives
them confidence. And you know, a lot of
them wind up buying!
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While the T8 had the OTL-like clarity of the Graaf GM 200, it was an altogether more subtle form of it. And this clarity was no better revealed than when listening to a lovely LP called It Don't Mean a Thing If You Can't Tap Your Foot to It, with Milt Jackson, Ray Brown, Cedar Walton, and Mickey Roker (Pablo 2310-909). (What's up with that title, I wonder?) I auditioned "Stress and Trauma," recorded in July '84 here in New York — beautifully open, airy, layered, and spacious. I felt again that higher-order closeness to the music that I never tire of experiencing. Clarity in perfect union with musicality, not one at the expense of the other, as is often the case. The midrange was just beautiful, integrating perfectly with the rest of the frequency spectrum, alive with fine detail, harmonics, and realistic transient snap.

I then stepped back 11 years to another favorite Pablo, The Timekeepers (2310-896), this one featuring Basie and Ellington and recorded on the West Coast. I was astounded; it sounded as if it was made on the same day in the same studio as It Don't Mean a Thing....! Both evinced a straightforward, clear, open, musically compelling presentation with a beautiful balance of initial transients, harmonics, bloom, and space. I really dug it.

So how does Rozenblit's equal forward-voltage-gain fix work in the bass? Very well indeed. Both Pablos feature acoustic bass, and the nether regions were excellent in every way. My notes: "We go down, we go down well, we go down deep. While wonderfully acoustic and pitch-differentiated, the bass range comes off as a trifle light. But, importantly, not lacking in musicality."

Tackling the all-important lower-midrange on down, I spun my favorite track on Echoes of Enja (Special Sampler 4000): "Round About Midnight" by the Benjie Wallace Trio. It's one of the most brooding, contemplative takes on this contemporary jazz classic that I've ever heard. Very film noir. The T8s captured the acoustic bass extraordinarily well. The sound remained tight, full-bodied, pitch-differentiated, and authentically acoustic at all times.

Looking for Billy Big Bass, I set up the latest release from the evocative English group Dead Can Dance, Spiritus, on both CD (4AD 46230-2) and LP (4AD DAD 6008). It sounded significantly turned way up (Kathleen always likes to crank it). For the record, when you turn the T8s up, they deliver. The bass sounded large and in charge, always in perfect control. The sense of lightness was less noticeable at really high spls, where the transparency, definition, and air really made my day.

The T8s aren't power power amps, in the mold of the GM 200 or a pair of big VTls. Yet when turned up, their thermal reserve works well at reproducing larger musical efforts. The T8s may be chippable, but despite some fairly concerted efforts, I couldn't get them to do so. For example, try Shostakovich's "The Street" on Russian Pops, the new Mark Gorenstein release from Pope Music (PMG2015-2). In the back of the hall there's a tinpani that powerfully energized our listening room. The T8s handled these mighty dynamics, both micro and macro, with a natural grace and assurance that belied their modest power rating.

Their imaging was also completely first-rate. The second side of Spiritus was transplanted with me in a visceral, very virtual-reality way directly into the Middle-Eastern atmosphere that DCD conjures up. The circumspect effect was stunning, participatory, and downright fun.

Imaging specificity was also excellent. Take Steve Hoffman's terrific remastering of Bags Meets Wel! (DCC GZS-1093), featuring Milt Jackson and Wes Montgomery, of course. I couldn't believe how great it sounded. Notes: "I've never heard the vibes so well recorded. Bags' vibraharp is unambiguously positioned in space, the Great Man poised above, flying mallets in hand. It's involving (and perfectly easy) to follow him as he glides back and forth, hammering away at his instrument. The initial transient and harmonic wave-launch are in perfect balance, so acoustic and wonderful that it's giving me wood!"

**Power to the people**

You might say the T8 is the push-pull amp for single-ended crazies, forgetting for the moment that it's an OTL. I found myself enchanted by the monoblocks right from the start. Their refined, transparent, ultradetailed, and, above all, natural presentation always got the best out of any material I threw at them. They were, at all times, effortlessly musical. At the price, I'm licking my pencil point and marking them down as a real bargain. Highly recommended.
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Sonic Frontiers Line-1 preamplifier and Power-1 power amplifier

Muse Kastanovich

This is the first time I’ve reviewed a tube pre- or power amplifier. I have to admit that I was a little scared at first. I never studied vacuum tubes in any of my university electrical engineering courses, so they’re still a little mysterious to me. Yes, I’ve grown quite fond of the 1969 Fender Bassman 100 tube guitar amp that I rebuilt with premium parts. Still, those little glowing bottles suggest perhaps more of a magical musical reincarnation process than doing old transistors. I can see something happening, but just what are those hypnotic high-voltage sparks doing in there?!

Apprehension and mystique aside, could Sonic Frontiers’ special brand of tube circuitry bring more life to the music than a comparable transistor design? The Line-1 and Power-1 are the least expensive units in Sonic Frontiers’ “regular” line of amplification. The overall design quality is more ambitious than in SF’s less expensive Anthem line of tube amps, which are not remote-controlled. The supplied measurements would certainly be respectable for a transistor design, and are better than many other manufacturers’ tube amp specs. SF’s Chris Johnson is quick to point out how their “budget” amps outperform other tube amps from respected manufacturers. (There isn’t space here to go through the detailed comparisons. If you want to tabulate the exact differences, you’ll have to visit SF’s Website or obtain some of their printed literature.)

Sonic Frontiers Line-1
The Line-1 can do anything you want. (Reminds me of that great Journey song, “Any Way You Want It,” remastered on Time!, Columbia C3K 48937.) Its remote control is a particularly pretty, handleable, and clickable shiny aluminum flying saucer. The mother ship is quite beautiful as well, with a black anodized aluminum panel mounted in front of a larger shiny stainless-steel front panel. The cosmetics are classic Sonic Frontiers; enough said.

The remote controls balance and volume in 0.5dB steps, from “0” to “95.5.” It can select between inputs, and offers Standby/Operate, Mute, and Phase Normal/Invert. It can select among four different display brightnesses and Display Off. It can choose mono mode (always an 8dB stereo blend). The only control exclusive to the front panel is setting a default volume for each input: Set volume and balance, then hold down the desired input button for four seconds; the setting will be stored. The preamp reverts to these settings whenever switching inputs; the settings are not lost when power is removed from the preamp.

Sonic Frontiers Power-1
Push-pull tube power amplifier. Power output: 55Wpc into 8 ohms (dBW), 20Hz–20kHz, both channels driven with less than 1% THD. Tube complement: four 6550C/KT88, six 6922. Inputs: RCA SE, RCA inverted polarity, XLR balanced. Frequency response: 5Hz–30kHz, +/-0.5dB at 1W. SMPTE intermodulation distortion: <1%, 20Hz–20kHz at 55W. Input impedance: 200k ohms balanced, 100k ohms SE. Input sensitivity: 940mV RMS for 55W output, balanced or SE. Output impedance: 0.28 ohms at 1kHz. Rise time: 5us.

Dimensions: 15" W by 9" H by 20" D. Weight: 50 lbs.
Serial number of unit reviewed: 101170.
Price: $2495.

Common to both:
Warranty: 5 years, nontransferable (1 year for tubes). Approximate number of dealers: 100.
Manufacturer: Sonic Frontiers, 2790 Brighton Road, Oakville, Ontario, Canada L6H 5T4. Tel: (905) 829-3838. Fax: (905) 829-3033. Website: http://www.sonicfrontiers.com.

Stereophile, November 1997
There are four sets of single-ended (unbalanced) line-level inputs, as well as a tape loop, all on RCA jacks. Also on RCA's is the surround-sound processor (SSP) input. When selected, this input is connected directly to the main outputs, allowing system volume to be controlled by the processor. There are two sets each of balanced XLR inputs (pin 2 positive). SE RCA main outputs, and balanced XLR main outputs. There is a \( \frac{1}{4} \) phone jack on the front panel, driven by a dedicated headphone amp. When headphones are inserted, all the preamp's main outputs are muted. There are also two \( \frac{1}{16} \) mini jacks: one for an infrared repeater, one for a Relay Trigger output.

The volume control knob changed level more slowly than usual. This, along with the large, clear LED display, was good for quickly arriving at the exact desired listening level. With computer control at their disposal (more on this later), the SF design team has added some nice unseen touches. The volume smoothly ramps up after changing inputs, muting, or unplugging headphones.

A straight line: The Line-1's circuit is based on that of the SFL-2 preamp, with some improvements. It is a cross-coupled, fully balanced topology throughout. First is a cathode follower stage supplied by a constant-current source. Next is a cathode-coupled voltage-amp, coupled to the output cathode follower via a 0.22\( \mu \)F PPFX MultiCaps. The output of the preamp is direct-coupled, with a servo used to minimize DC offset. Direct coupling helps keep the output impedance constant at a very low value for a tube preamp, just 150 ohms SE.

The power transformer has nine separate secondaries that feed 15 distinct regulation stages. Ultrafast soft-recovery diodes are used to help minimize AC noise. The high-voltage supply uses two regulators in series for better line rejection and lower impedance. Seven of the regulators are mounted on a large heatsink that also serves to shield the main circuitry from the power supply. Film capacitors — 23 Wima and 5 Solen — are used in addition to the required electrolytics.

All switching is via sealed relays mounted close to the inputs and outputs. One Crystal CS3310 two-channel digital volume control IC is used for each channel, with each of the two sections handling one phase of the balanced signal. These controls include FET switching elements and arrays of well-matched resistors, and have no mechanical contacts in their signal paths. The close 0.05dB matching in the

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MEASUREMENTS

The output impedance of the Sonic Frontiers Line-1 at its main outputs measured 116 ohms (166 ohms balanced) in the left channel, 119 ohms (168 ohms balanced) in the right — somewhat lower than specified (which is in the right direction).\(^1\) The input impedance measured 10k ohms (21k ohms balanced). Neither the input nor the output impedance varied significantly at different settings of the main level control. Volume-control tracking was excellent, to within 0.2dB. The output impedance at the tape outputs was 148.5 ohms with either a 25 ohm or a 600 ohm source impedance, indicating actively buffered tape outputs.

The DC offset at the Line-1's outputs measured 2.1mV left, 0mV right. The preamp is noninverting from its unbalanced outputs, with pin 2 positive in the balanced mode. Maximum voltage gain measured 122dB unbalanced, 17.7dB balanced. Unity gain was at a volume-control setting of "83.5." S/N (reference 1V) measured 90.6dB from 22Hz to 22kHz, 72.6dB from 10Hz to 500kHz, both unweighted, and 93.8dB A-weighted. The corresponding S/N readings for the balanced mode were 87.1dB, 75.1dB, and 89.5dB, respectively.

The Line-1's frequency response was superbly flat and so is not shown. Fig.1 shows the crosstalk — it's noticeably better in balanced mode, but the audible difference should be negligible. The THD+noise vs frequency plot for the Line-1 is shown in fig.2. Spectral analysis revealed the unbalanced distortion to be mainly second harmonic, with some third also present. The reason for the higher apparent distortion in unbalanced mode relates to the input level chosen for the measurements. Fig.3 shows the THD+noise plotted against increasing output voltage at 1kHz. Note that the minimum distortion in unbalanced mode occurs at an output of just over 200mV. Since this is not nearly enough to drive any power amplifier to its maximum output, I elected to run both balanced and unbalanced distortion measurements (and crosstalk measurements as well) at an output of 2V. Though still acceptable, the Line-1's unbalanced distortion is considerably higher than the balanced distortion at this output.

— Thomas J. Norton

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\(^1\) Note that only the control of these volume devices is digital. The audio signal passing through them is not digitized in any way.
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**Sound**

After installing the tubes and breaking the Line-1 in for about 50 hours, I swapped it into the system in place of the Audio Electronics AE-2 MOSFET preamplifier I'd been listening to for months. This was not exactly a fair comparison: while the AE-2 is quite a good preamp in its price range, at $599 the AE-2 costs only about a third as much as the Line-1. In addition, the AE-2 is a clone of Nelson Pass's Bride of Zen, designed specifically to drive the low input impedance of the Zen power amplifiers that reside in my system.

I had a moment of doubt when I thought the Line-1 might blow up when trying to drive the low, 4k ohm input impedance of my Zen amps. I'm sure many olde-tyme, classic tube preamps cannot drive the Zen amp.

There was no problem. The Line-1 passed this acid test with flying colors, driving the Zen without skipping a beat or husting a nut. The sound was obviously more detailed and more powerful, with a neutral balance. Despite the expected synergy between the Zen and Bride of Zen, the Sonic Frontiers' higher fidelity was quickly proving it a superior choice. It was a clear enough improvement for me to box up the AE-2.

The Line-1 was providing extremely clean, clear sound. Listening to Journey's digitally remastered *Frontiers* (Columbia CK 67723), I was totally freaking out. These new Journey CDs sound fantastically better—even the cover art has been improved. And get this: they're selling them at budget price! I'll take the lot!

It was so much easier than I remembered to hear each one of Steve Perry's vocal tracks on *Frontiers*. Surely part of this transparency was the improved CD, but I couldn't discount the Line-1's contribution. Neal Schon's guitars were coming out of the woodwork, with interesting guitar sounds everywhere. The Line-1 laid bare the complexities of the mix, so that I could enjoy not only a well-balanced whole, but also focus in on any individual sound I wanted to.

Partway through the review period, Sonic Frontiers sent a slightly upgraded Line-1. Back to the factory went #101591, and into the system went #102125. I noticed that the tubes were marked differently on the new sample, and was told that some other small changes had been made to improve the performance. It was difficult to hear any difference on first listen, as both Line-1s were so transparent. I did hear a small improvement, though: Silences were a little blacker through the newer model. It was time to replace the Zen monoblocks with the Power-1.

**Partway through the review period, Sonic Frontiers sent a slightly upgraded Line-1.**

The new Kimber Hero interconnects (basically an XLR-terminated PBJ with an outer jacket), along with the Power-1, allowed balanced operation from the preamp input all the way to the speaker crossover. I put on an album of nothing but great songs: the Cranberries' *To the Faithful Departed* (Island 314-524 234-2).

There was a nice inner glow. The bass guitar was well articulated, and Dolores O'Riordan's voice had a very special presence: both angelic light and bestial power. What a combination.

All the frequency regions were given the same weight. Hearing everything equally well on this carefully mixed album made me think that the balanced operation referred to more than just two parallel signals for each channel. It could just as well have referred to the balance that I heard in the music.

To investigate the soundstaging capabilities more, I broke out the ORTF purist-miked CDJ masters of my first album, *Blakie*² by Fluid Truth. I scrutinized an alternate take of "Walking on the Clouds," the first song I wrote about Native Americans. The soundstaging was very good—the 20' of space between the mike position and the drumkit was convincingly portrayed. The reflections of the sound from the thin wooden walls of the barn where we recorded could be heard, and all instruments were precisely placed in the soundstage. However, listening to this and other purist-miked discs, there was a little less immediacy and air than I remembered. Tube amps in general seem to have a good reputation for superior imaging and space. In my limited experience, however, single-ended MOSFET amps tend to surpass tube amps in this department.

In terms of low distortion, timing, and dynamics, the Line-1 with balanced connection was difficult to fault. By not using any compression, I gave my CD more extreme dynamics than are found on most rock CDs. The preamp did not pull back the reins on any of this powerful energy but let the music run as freely as possible, for a very exciting ride. The bass in particular was quick, tight, and controlled.

The Line-1’s HeadRoom headphone output sounded magnificent driving a pair of Sony MDR-CD999 'phones. It was more detailed and neutral-sounding than any headphone output I’ve ever listened to. Sonic Frontiers really dedicated some resources to this very serious headphone output. With the right pair of cans, one could listen

### Associated Equipment

**CD transport:** Rotel RDD-980.

**Jitter reduction:** Theta TLC, Sonic Frontiers UltraJitterbug.

**D/A processor:** The Parts Connection Assemble DAC-2 with Parts Upgrade Kit.

**Preamplifier:** Audio Electronics AE-2.

**Power amplifiers:** Home-built Zen monoblocks, Pass Labs Aleph 3.

**Loudspeakers:** B&W 804, Signet SL256.

**Headphones:** Sony MDR-CD999.

**Speaker cables:** Straight Wire Maestro (bi-wire pair), TARA Labs RSC Reference Gen.2.

**Interconnects:** Kimber PBJ, Kimber Hero XLR, Sound & Video Audiflex Gold V, Straight Wire Maestro XLR.

**Digital cables:** Sound & Video Digiflex Gold I and Digiflex +Plus, Illuminati DV-30.

**Accessories:** RoomTune JustaRack with solid brass nuts, home-built isolation transformer power conditioner, AudioPrism CD Stoplight, ASC Alpha Wedge foam panels, tapestries, and William O. Taylor's *With Caster on the Little Bighorn.*

² To get a copy of this CD, or just to ask questions about audio, e-mail me at MuseK1@aol.com.

— Muse Kastanovich

Stereophile, November 1997
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Stereophile, November 1997
through this output indefinitely, with almost no listening fatigue.

**Sonic Frontiers Power-1**

The Power-1 shares many design traits with the other Power-series amps from Sonic Frontiers. Its chassis looks fairly conventional, the transformers hidden under a cover at the back. The tubes are proudly displayed, rising above the polished stainless-steel front section (those who need more safety can use the sturdy tube cage provided). Set into the back panel are the Power and Standby buttons, each with an indicator LED. On the back panel are high-quality Cardas speaker posts and three sets of inputs—SE inverting, SE noninverting, and balanced—with a separate input/mute selector switch for each channel. The amp comes with its speaker outputs optimized for 8 ohm loads. If desired, it can be set for 4 ohms by a Sonic Frontiers dealer.

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3 HTR reviewed the more powerful Power-2 amplifier in May '97 (Vol.20 No.5, p.153). I am currently working on a review of the top-of-the-line Power-3. —JA

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**Measurements**

After its pretest, the **Sonic Frontiers Power-1** was typically but not uncommonly warm for a tube amplifier. Its input impedance measured a high 103.4k ohms. Its voltage gain into 8 ohms was 26.76dB (27dB balanced). The measured output impedances varied between 0.36 and 0.4 ohms, depending on frequency and load—in any event, far lower than that of most tube amplifiers. I would expect the load-dependent performance variations to be finite but relatively small.

DC offset measured 0mV in both channels. S/N (ref. 1W into 8 ohms) measured 81.6dB from 22Hz to 22kHz and 89.9dB from 10Hz to 50kHz, both unweighted, and 92.5dB A-weighted.

The corresponding balanced measurements were 88dB, 85.8dB, and 94.9dB, respectively. The Power-1 was noninverting in unbalanced mode, with pin 2 positive in balanced mode.

The frequency response is shown in fig.4 (the results for other load conditions and for balanced operation were virtually the same); the results into our simulated real load show only relatively small—though possibly audible—deviations due to the amplifier’s output impedance.

The Power-1's 10kHz squarewave response is shown in fig.5. The result here is fair—though not at all unusual in a tube amplifier—with a single cycle of damped overshoot visible on the leading edge. (There is also a little damped overshoot visible on the 1kHz squarewave, not shown here.)

The Power-1's crosstalk (fig.6), while not the best we've measured, is certainly well within the range of audible insignificance. The THD+noise vs frequency result (fig.7) indicates a respectably low distortion in the midband even into a 2 ohm load, with the usual rise at the top of the audio band. The corresponding distortion results for the balanced mode (fig.8) are slightly though not dramatically lower than the unbalanced measurements. The waveform of the distortion (1kHz) at 2W into 4 ohms, shown in fig.9, is predominantly third harmonic plus noise. The same is true into 2 ohms (not shown), though higher harmonics become more evident into this lower-impedance load. Into 8 ohms, the distortion is heavily second harmonic (not shown).

![Fig 4 Sonic Frontiers Power-1, frequency response at (from top to bottom at 1kHz): 1W into 8 ohms, unbalanced; 2.83V into simulated speaker load (0.5dB/vertical div.).](image1)

![Fig 5 Sonic Frontiers Power-1, small-signal 10kHz squarewave into 8 ohms.](image2)

![Fig 6 Sonic Frontiers Power-1, crosstalk (from bottom to top at 1kHz): R-L, L-R, unbalanced; L-R, R-L, balanced (10dB/vertical div.).](image3)

![Fig 7 Sonic Frontiers Power-1, unbalanced mode, THD+noise vs frequency at (from top to bottom at 1kHz): 4W into 2 ohms, 2W into 4 ohms, 1W into 8 ohms, and 2.83V into simulated speaker load.](image4)
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plate-loaded voltage gain stages. A unique feature is the voltage amp topology, which allows balanced feedback with both balanced and SE inputs.

The output stage uses one pair of Svetlana 6550C power pentodes in ultralinear configuration. Each output tube has its own bias control and indicator LED. Using the supplied plastic driver, biasing the tubes is quick and safe. I biased the amp twice during the review period to ensure proper operating conditions.

With the Power-1, Sonic Frontiers has tried to create an amplifier with better overall bench measurements than traditional tube amps, while not losing the best sonic qualities of tubes. At the same time, with its use of the highest-quality parts, the Power-1 attempts to equal the performance of the best transistor amps in the areas where they have been most highly praised. A tall order indeed!

**POWER-ONEDERFUL SOUND:** The Power-1 first entered my system after a 50-hour break-in period, and its sound was obviously impressive. While lacking some of the accessible coherence of the single-ended Zens it had replaced, it had more control in other areas. There was plenty of accuracy and extension in the treble, and the bass was just a touch more solid. Unlike “classic tube sound,” and like the Line-1, the sound was exceptionally clean and clear, with very black silences. There was perhaps a touch less bloom in the soundstage, however.

I threw on the *Twilight to Starlight* disc of the Smashing Pumpkins’ *Melon Collie and the Infinite Sadness* (Virgin 8 40861 2). Billy Corgan’s tentative yet always expressive singing came across in a very sweet and personal way. The interesting artificial effects added to different instruments gave them all unique characters—for example, the various mutated guitar sounds that inhabit “Thru the Eyes of Ruby.”

The Pumpkins’ omnipresent rhythmic intensity was toned down just a touch, but in general the pace and timing were quite good. Jimmy Chamberlin’s drumming on “By Starlight” was center-of-the-earth solid. I’ve admired his drumming for some time; the reasons were made quite plain when listening through the Sonic Frontiers gear.

Talk about solid drumming—how

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**Table 1 Sonic Frontiers Power-1:**

<table>
<thead>
<tr>
<th>Load ohms</th>
<th>Discrete Clipping levels (% THD+noise at 1kHz)</th>
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<tbody>
<tr>
<td></td>
<td>Both Channels Driven W (dBW)</td>
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<tr>
<td>8</td>
<td>73 (18.6) 74 (18.7) 773 (18.9)</td>
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<tr>
<td>4</td>
<td>75 (15.8) 71.2 (15.5) 80.7 (16.1)</td>
</tr>
<tr>
<td>2</td>
<td>53.9 (11.3) 116V</td>
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</tbody>
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**Fig.9** Sonic Frontiers Power-1, 1kHz waveform at 2W into 4 ohms (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

**Fig.10** Sonic Frontiers Power-1, distortion (%) vs output power (from bottom to top at 10W): 0 ohms, 4 ohms, and 2 ohms.

**Fig.11** Sonic Frontiers Power-1, spectrum of 50Hz sinewave, DC-1kHz, at 54W into 4 ohms (linear frequency scale).

**Fig.12** Sonic Frontiers Power-1, HF intermodulation spectrum, DC–22kHz, 19+20kHz at 39W into 4 ohms (linear frequency scale).

*Stereophile*, November 1997

— Thomas J. Norton
New York Magazine “BEST BET”

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about Lars Ulrich on “Bleeding Me,” from Metallica’s Load (Elektra 61923-2)? I love to listen to agile, super-powerful drummers play slow beats. They’re like cocked catapults, straining to hold back the great force they could unleash if they wanted to. Again, the Power-1 mapped out the spaces between drumbeats precisely, revealing the mood of the drummer himself.

The Power-1 mapped out the spaces between drumbeats precisely, revealing the mood of the drummer himself.

Of course, once Load was in the disc drawer, I had to listen to “The Outlaw Torn.” I repeated this track, using it to compare balanced and unbalanced connections between preamp and amp. The cables were almost identical: Kimber PBJ and Kimber Hero. As SF states in their literature, the two modes of connection sounded very similar, though balanced sounded a touch smoother. The SE might have had a bit more dynamic snap in the treble and midrange, but this was a very subtle distinction. Overall, I preferred the balanced connection for the effortlessness of its sound.

AGAINST THE ALEPH 3: For a more ambitious single-ended/balanced comparison I hooked up the Pass Aleph 3 SE MOSFET power amplifier, which I reviewed in the April 1997 Stereophile (Vol.20 No.4, p.196). The first CD up was one that I noticed had been served particularly well by the Power-1 in a previous listening session: Kathleen Battle’s French Opera Arias, with the Orchestra of the Bastille Opera (Deutsche Grammophon 447 114-2).

The top octave was a little silkier with the Pass amp, the soundstage was larger, and the orchestra had more in-room presence. However, the middle of the midrange sounded a bit recessed through the Aleph 3. The frequency balance was more realistic on the Sonic Frontiers, the Pass sounding a little too thin. I preferred Battle’s timbre with the SE amp, but preferred her timing and dynamics with the Pass. Her vibrato was easier to hear with the Pass.

I unveiled the big guns. The first one was the HDCD*-mastered Epi-

phony: The Best of Chaka Khan (Reprise 45865-2). Again, the sound was a bit threadbare through the Aleph 3, while the Power-1 provided a more satisfying weight to instruments. The Aleph 3 did have “Ain’t Nobody” bumpin’ and groovin’ until my poor head had to bob back and forth in celebration of its royal funkiness. That was goodwood. This SE MOSFET amp facilitated an almost tactile connection to the performer that the Power-1 couldn’t quite match.

The next CD up was the HDCD-mastered version of Stephen Stills’ first solo album, Stephen Stills (Atlantic 82809-2). I’m quickly growing horribly fond of this album, which I’d never heard until a month ago. There’s a stereo-effect steel drum on “Love the One You’re With” that was more recognizable through the Pass amp. The bass was less satisfying with the Pass, though—nice and quick, but less meaty. By comparison, the Power-1’s bass was HUGE.

Playing in an identical system with identical recordings, the Power-1 could not dethrone the overachieving, “Class A Recommended” Aleph 3.

Conclusions

The Sonic Frontiers Line-1 is a very convenient preamp to use, with as many inputs and features as anyone is likely to need. Its sound quality is difficult to fault. It adds little enough coloration and distortion to signals passing through it that hearing and separating its characteristic sound from the sounds of the rest of the system is very difficult. This is what a good preamp needs to accomplish to do credit to the connected source equipment, and this the Line-1 can do. Recommended.

The Power-1 provides the same top-notch parts and build qualities as the Line-1. Its unique circuit design ensures exceptional measurements for a tube amp. For one thing, the low output impedance will keep the frequency response flat into any loudspeaker. The Power-1 doesn’t provide quite as clear a window into the original music-making as the similarly priced Pass Aleph 3. It did, however, manage to better the Pass amp in harmonic rightness and bass slam. This is very good performance at the price, and the Power-1 is recommended for its superbly balanced rendering of voices and instruments. It also creates a synergistic match when paired with the Line-1, particularly when using the balanced connection.
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Clearaudio Reference turntable, Souther TQ-1 tonearm, and Silent Running Isolation Base

Michael Fremer

At the CES debut of Lou Souther's pickup arm well over a decade ago, the only thing more eccentric than the arm itself was the LP Souther brought along to demonstrate the linear tracker's abilities. He'd drilled a second, way-off-center hole in the label area, and was using it to create a surreal, Dalí-esque demonstration: As the record spun, the grooves shifted abruptly from side to side, forcing the arm/cartridge to swing wildly to and fro. To the amazement of all, the totally mechanical system negotiated the torture test without skipping a beat or a groove.

Over the years, the Souther arm, which uses quartz rods as rails upon which ride three miniature stainless-steel ball bearings, has been refined a number of times. At the end of 1987, the German Clearaudio company, best known for its full line of well-reviewed cartridages, licensed the arm from Souther and now manufactures it in Germany.1 The arm is wired by Discovery Cable, who is also Clearaudio's American importer.

Clearaudio sells the arm in combination with its Reference turntable—a striking, compact, suspensionless, solid acrylic design featuring a standalone motor and facilities for the simultaneous operation of two tonearms. That combo—sitting atop a custom-made (in America) Silent Running Audio platform, also supplied by the importer and available as an option—is the subject of this review.

Friction in my diction

For a complete look at linear-tracking arms, airbearing and otherwise, check out my review of the Rockport Series 6000 arm in the May 1996 Stereophile (Vol.19 No.5, p.136). As I wrote there, records are cut in a straight line, and, ideally, that's the way to play them back. But dragging an arm across a record instead of pivoting it in an arc from a fixed point creates a plethora of problems that, some would argue, outweigh the benefits to be derived from a straight ride across the grooves.

Floating the arm on a thin film of pressurized air—Rockport, Versa, Forsell, Eminent Technology, Air tangent—is one way of moving it across the record; a servo motor system à la the Goldmund is another. Souther's all-mechanical method is the least complicated and least expensive, but regardless of how you do it, certain difficult problems need to be addressed, and one of these is the great disparity between vertical and horizontal effective masses.

In a fixed-point pivoted arm, because the pivot-to-stylus length is the same in both planes of movement, the effective vertical and horizontal masses are almost identical. In a linear-tracking arm, where the entire package is dragged across the record, these masses are very different. The horizontal mass is the entire arm: cartridge, armtube, bearing system, and counterweight. The vertical mass, being a pivoted system, is the armtube and cartridge—a much smaller effective mass.

A cantilever/arm is a spring-loaded system, and, contrary to what some have stated, I don't believe you can eliminate the effect of inherent system resonances by damping at the headshell. The system will have both horizontal and vertical resonant frequencies. In the case of a linear-tracking system, there will be two disparate resonant frequencies. Due to such a system's large mass, its horizontal frequency will be much lower, and easily excited by groove eccentricities caused by off-center pressings—which, unfortunately, is most of them. (See my May 1996 article for more details on this.)

You can damp the large horizontal resonance with a silicone-filled trough as Rockport and Eminent Technology

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1 The Souther arm in its Tri-Quartz Improved (TQI) incarnation was favorably reviewed for Stereophile by Steven Stone in April 1995 (Vol.18 No.4, p.247). —JA
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do, and/or you can lower the horizontal mass (thus raising the resonant frequency and reducing its intensity) by reducing the length of the armtube — as John Bicht did in his airbearing Versa, and Lou Souther did in his mechanical arm. Both of these arms suspend the playback mechanism directly over the record, placing the vertical pivot inches behind the stylus' travel across the record.

Problem somewhat solved — that's one reason the Souther TQ-1 arm stays in the groove (which is not to say that it tracks properly) on wildly eccentric records. But BIG problem created — now even the most minute record warp causes large vertical cartridge and cantilever excursions that result in highly audible "warp/wow" and large changes in vertical tracking angle (VTA). Indeed, slightly warped records in my collection that create no audible problems on any other arm I've auditioned, pivoted or linear-tracking, were unlistenable with the Clearaudio/Souther combo. Especially classical and jazz piano recordings — I got seasick.

The Souther's armtube is attached to a minuscule, ultra-rigid, solid titanium rod that further reduces effective horizontal mass — a good thing, as Martha Stewart would say. The rod hangs suspended from a vertical bearing carrier containing conical, Swiss-made sapphire V-bearings on a hardened stainless-steel axle, the latter acting as a fulcrum with the cartridge at one end and the counterweights at the other.

Three horizontal bearings — flanged, train-wheel-like affairs — ride on two clear quartz rails, one affixed to either side of an aluminum plate. The bearings are arranged in a triangular fashion: one rides the front rail, two ride the rear. A small finger-grip protruding vertically from the housing allows the user to slide the arm back and forth across the record once the cueing lever has been raised.

The entire mechanism is attached to the turntable base via a massive pivoted mechanism that can be swung up and out of the way for easy record changing. For safekeeping, this locks in place at the top of its travel. If you don't slide the arm itself all the way back before you raise the mechanism, it comes crashing down with a springy thud and bounce that may have you sliding your pants. No damage done (to the stylus, anyway), but it's a good idea to get in the habit of sliding the arm down anyway before raising the mechanism.

**Setup of the Clearaudio Reference is difficult any way you look at it.**

Clearaudio Reference turntable and Souther TQ-1 tonearm

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Stereophile, November 1997
procedure for a linear-tracking arm. It's in setting VTA and the arm's level that you run into real difficulties. The rail mechanism attaches to the pivoted part of the base via two steel rods. Sliding the mechanism up and down on the steel rods is what allows you to set VTA. Think of a seesaw suspended by its fulcrum, with the stylus on one side and the counterweight on the other. The higher the fulcrum is from the plinth, the higher the VTA — the back of the arm goes up. Got it? But it's impossible to precisely set VTA because sliding the stiff mechanism up and down on the rods is balky and imprecise. You're not "dialing," you're pushing and pulling, and obviously not during play. And if you pull too hard you'll pull the whole thing off, and that's no fun. However, a screw mechanism allows you to set a "reference" point.

Still, with a great deal of work you can get the arm parallel to the record, which is a good VTA starting point. But there's another adjustment you have to make: leveling the rail mechanism relative to the record. When you lower the rail/arm to play a record, its travel is stopped by two threaded rods protruding from the nonpivoting part of the base. Screw the rods in, and the rail slopes downhill toward the spindle. Screw them out, and the arm faces an uphill struggle.

Fortunately, the mechanism comes with a built-in bubble level that makes leveling easy. Unfortunately, "level" is not where you want to set the rail mechanism because, so set, the stylus will stick in the groove. You have to set it to slope downhill toward the label to overcome friction. But doing so changes the VTA. In fact, the VTA changes across the record because the height of the arm relative to the record changes as it traverses the grooves! That's not a good thing. What's more, the angle makes azimuth adjustment tricky too — if not impossible to set precisely.

With enough pushing, pulling, raising, and lowering of the arm mechanism on the steel rods, and of the leveling mechanism using the set of threaded posts, you can get the system to work. Keep in mind that, during this process, if you get the VTA exactly as you want it by eye but you've not sloped the rail sufficiently, the arm will stick and you'll have to slope it more, which will force you to change VTA, which will force you to readjust the slope, which will... get the picture?

This is all assuming you care enough to really set this baby up correctly. If you don't, you can do a half-assed job and it will play. But even if you do it right, the arm is sliding downhill, using gravity. That means the stylus must be biased toward the inner groove wall the whole way down — another not good thing. The only force acting to balance out gravity is friction (or "stiction," as some call it), which causes the arm to not want to move. There's enough stiction in this arm to prevent movement when the arm is level with the record surface. Therefore, when you have gravity pulling the arm toward the center of the record, you have to hope there's enough stiction pulling it the other way to keep the stylus from riding the inner groove. Is this any way to run a railroad?

But keep something else in mind: In order for a linear-tracking arm to track with true linearity, it must traverse the record so that the stylus maintains perfect tangency to the groove. If there's sufficient play in the bearings to allow either yaw (movement around the cantilever's zenith) or pitch (forward/backward play) so that, during heavily modulated passages, the arm is actually pulled forward, the arm is not really a "linear tracker." In fact, as it wiggles its way across the record, its tracking error can be worse than that of a correctly designed pivoted arm. And I was shocked at the amount of yaw there appeared to be in the Souther's bearings, not to mention the clatter made by the stainless-steel wheels on the quartz rails.

The job of the arm is to remain fixed in space so that only groove modulations move the stylus/cantilever. You don't want the cantilever's movement to be able to set the arm in motion [which will tend to cancel the cantilever vibrations caused by the groove information — Ed.]. At the same time, there must be enough bearing movement to allow the arm to follow the groove spiral — a tough job, to be sure. In the case of the TQ-1, a whole series of mechanical circumstances makes the job even more difficult, if not virtually impossible — all in an effort to rid playback of the minute amounts of tracking error induced when a pivoted arm arcs across the grooves instead of traveling in a straight line. Is it worth the effort? That's where listening comes in.

But first...

**Clearaudio Reference turntable**

The Clearaudio Reference turntable consists of a thick, solid slab of clear, cool-looking, polished acrylic in the shape of a boomerang (the shape is said to scare off resonant modes — why, I don't know), and a +2 3/8"-tall solid acrylic platter (very popular in Germany) grooved for the O-ring belt. The bearing is a precision inverted polished-ball type conceptually similar to what SOTA used. The spindle sits atop the tall, flanged, 1"-diameter bearing sleeve, over which fits the drilled platter.

This kind of platter arrangement is risky business if the machining is not precise. It is precise here. While solid acrylic platters are fashionable, I don't understand why — aside from the fact that acrylic is relatively easy to machine. Supposedly, acrylic has a mechanical impedance similar to vinyl's. But even if this is true, vinyl is much softer than 2. The idea is that by matching the mechanical impedance of the platter to that of the record, the amplitudes of reflections of stylus/groove-induced mechanical vibrations from the disc/platter interface are minimized. UK audio writer John Crabbe has hypothesized that such vibrations within the body of the record can lead both to a reduced system dynamic range and to a false sense of reverberation. — **JA**

---

**Associated Equipment**


**Accessories:** Vibraplane isolation platform, Symposium Acoustics boards, Shakti Stones, A.R.T. "Q" dampers, Lloyd Walker Valid Points, Yamamura Millennium Bearing electronics and speaker supports.

— **Michael Fremer**
acrylic, and the resonant characteristic of acrylic is high in frequency, way into the audio band. Put this platter up to your ear and tap it. *Ping.*

Having an O-ring riding in a groove means that motor height is *critical* to low wow’n’flutter performance. If the O-ring starts to contact any of the groove walls, you’re finished — it will tend to stick as it exists the groove. Because the pulley height is adjustable on the motor spindle, you’d better check that carefully too to make sure the belt rides centered in the groove. But the pulley is precisely ground: both speeds were dead on.

The unsuspended plinth sits on three cones. There are two round, massive, tapped brass cylinders for arm mounting, and a standalone, high-quality AC synchronous motor fitted with a plastic dual pulley.

**Turntable setup**

Setting up the Reference ’table doesn’t take long, but you must place it on a level surface, preferably one of low resonance. Or, better yet, one that acts as a mechanical energy “diode” — like the Symposium Acoustics board, which is what supported my review sample. A Vibraplane, Townshend Seismic Sink, or Bright Star platform would also work well. Later in the reviewing process I received Silent Running Audio’s boomerang support. It’s built specifically for the Reference ’table, though the company also makes impressively constructed vibrational control stands for all other audio products. The designer’s background is in vibrational control for nuclear submarines, hence the Silent Running moniker.

My review sample came with Clearaudio’s gold-coiled Accurate cartridge already installed, a set of top-of-the-line RCA/RCA Discovery Wire Plus Four interconnects, and a Souther Smart Clamp — a plastic coaster that I consider inadequate for a $6500 arm/’table combo. Never having heard a Clearaudio cartridge in my system, I listened with caution for a few break-in weeks before switching to known quantities: Lyra Clavis and Clavis Da Capo cartridges. I also mounted the Clearaudio on a Graham ceramic armwand so I could assess its character on another, more familiar arm.

**The big picture**

Given the Souther TQ-1 tonearm’s inherent mechanical idiosyncrasies, the Clearaudio combo sounded much better than it had any right to. In fact, it produced a big, downright intoxicating sound — rich, and reach-out-and-touch-it transparent. The combo created a gigantic, billowy soundstage left/right and front/back, within which were placed big images commensurate with the staging. Image focus and stability were much better than I’d expected, and with no perceptible meandering — which really surprised me. Instrumental separation and individual image three-dimensionality were both first-class. Dynamic performance was also impressive, if not the last word in speed and control.

With the premounted Clearaudio cartridge, though, the arm/’table sounded bright and somewhat hard in the upper midrange, with an edge tacked onto female voices, brass, upper-register string tone, and sibilants, which were rendered somewhat crisply. But combined with a very warm and luxurious lower midbass, the overall effect was viv-Viv-VIVID! “Hi-Fi” vivid. Massed string sections lit up rich with, woody energy and an abundance of rosy grit. Brass had bite and airy texture. The overall picture was of a Technicolor rainbow of instrumental colors and harmonic complexity. Combined with the sensational staging, the sonic picture was one I felt I could walk into, out of, and around.

Given its subjective frequency balance, the Clearaudio Accurate cartridge predictably exaggerated surface noise to the point where records that had always sounded quiet now offered up a constant sssshhhhhhh sound. And that was with either 47k or 100 ohm loading and after considerable break-in. But was that the arm/’table or the cartridge speaking? An inquiring mind wanted to know. So I installed the Accurate on a Graham ceramic armwand and, using the Graham 2.0/TNT Mk.III with the VPI’s air-bladder suspension, listened some more.

The Clearaudio cartridge’s performance was somewhat improved. The

**Tonally, the Clearaudio/Souther combo added a trace of brightness to the picture. This, combined with an exaggerated lower midbass, produced a pleasingly vivid, rich overall tonal balance.**

But is what’s in the grooves?

Playing Davy Spillane’s *Atlantic Bridge* (Tara/Cooking Vinyl 3019/009) — an album with some of the deepest, tightest bass I’ve ever heard on record — simultaneously on both ’tables proved conclusively to me that the Clearaudio/Souther combo created the illusion of ultradeep bass by producing what I can best describe as a “bubble” of out-of-focus lower midbass. The Graham

**Accurate has no rubber damping and, at the recommended 2.2gm, was not a particularly impressive tracker to begin with; mounting it on an arm that can better fix it in space could only improve its performance.**

While exaggerated surface noise was a problem, it was now less so, restricted to a narrower frequency band. That proved to be the case with music as well: brightness and hardness were reduced, replaced by a somewhat warmer overall picture with just a narrow rise that mildly but pleasingly spottid bells, cymbals, and other percussion instruments. Bass was more tightly focused, with less boating and somewhat better extension — not surprising, as the Graham 2.0’s bass performance is second to none in my listening experience.

To assess what the Clearaudio/Souther arm/’table combo was doing, I installed a cartridge with which I’m far more familiar: the Lyra Clavis D.C. I also put the older Clavis on a Graham ceramic armwand so I could directly compare the Clearaudio/Souther and Graham 2.0/VPI TNT combos using duplicate vinyl.

While the cartridges are not identical, they share a family history, and while the Audible Illusions 3A’s phono section doesn’t sound like the Sutherland PH-2000, it was easy to reverse phono sections to be certain of what I was hearing. I also reversed cartridges, putting the Clavis on the Clearaudio and the D.C. on the Graham. The things I do for love...

After exploring all of the various arm/cartridge/phono-section permutations, I concluded that, tonally, the Clearaudio/Souther combo added a trace of brightness to the picture. This, combined with an exaggerated lower midbass, produced a pleasingly vivid, rich overall tonal balance. And that, plus the larger-than-life soundstaging and inflated imaging, in turn created a particularly stimulating sense of three-dimensionality and transparency. This combination caused an immediate, exciting sonic rush that some will find attractive.
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Stereophile, November 1997
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2.0/TNT combo yields far better-focused, tighter, deeper bass, the source of which is much more clearly defined. I could hear this instantly. In fact, the Graham/TNT combo offers a more precise, sophisticated picture, with better resolution of inner details, better top-to-bottom harmonic integration, and more solidly rendered images. It just doesn’t sound as “involving” or “exciting” at first.

I put ICCC’s masterful reissue of Nat Cole’s Love is The Thing (ICC LPZ2029) on both ‘tables, and on the Clearaudio Nat’s vocal cords popped forward slightly on edge, the body component of his voice lying back with a rich, warm chestiness. The result was an excitement and sense of inner detail that the better-integrated, smoother-sounding Graham/TNT combo seemed to lack. But over the long haul, the latter package struck me as much more refined- and natural-sounding, and much better focused.

A more scientific audition

After noting a consistent set of differences by using duplicate pressings of some of my favorite and most familiar music, I auditioned Hi-Fi News & Record Review’s Test Record, of which I also have two copies. I did so with all three cartridges on both ‘table setups. Track 1 on side 2 features a 300Hz tone recorded in both channels at a very high level, +15dB. Through the Graham/TNT I got consistent breakup in both channels in addition to the 300Hz tone, which appeared centered between the channels. With the Clearaudio, the distortion meandered back and forth between channels—first on the left, then on the right—never stabilizing. The tone was repeated at three different points on the Test Record. The results were the same at all three points with both arms: stability on the Graham, meandering on the Souther. It appears that the Souther TQ-1 tonearm cannot track a groove accurately and with stability. Period.

I also tested the horizontal and vertical resonant frequencies on both setups. The Graham/Clavis/D.C. and Graham/Clavis/Accurate resonances were right where you want them: in the 8–12Hz range, centered between the warp-wow region at 6Hz and the start of musical information an octave higher above 20Hz. I couldn’t get the Souther/Clavis/D.C./Accurate to resonate at all in either direction—and if you think that’s good, you’ve got your head screwed on backward! The TQ-1 must have horizontal and vertical resonant frequencies somewhere, and they’re clearly outside both the desired range and the Test Record’s limits. I suspect the horizontal is lower than the lowest limits of the Test Record, which is bad, and the vertical is higher than the highest limits of the Test Record, which puts it way into music’s bass region. If this is the case, it also works against the production of really deep, fundamental bass.

Testing, testing . . .

It’s important to note that the suspensionless Clearaudio/Souther combo fed back like a microphone even when it sat on the Silent Running Audio base coupled in turn to the Symposium Acoustics platform. If I tapped the arm or the record while the stylus was in the groove but the platter was stationary, the drumming sound was intense. The slab of acrylic suspended over the rails and running the length of the mechanism appeared to act like a drum. Even when I tapped the turntable plinth, I got an audible whomp from the speakers. Ditto the isolation base, though to a lesser degree—indicating the Silent Running’s effectiveness.

Contrast that with the Graham/TNT combo: Even at almost full volume, with the stylus in the groove, I could tap the record, the arm, the plinth, the phone, or a leg, and there was barely a suggestion of a short, sharp knock. That difference is meaningful in terms of accurate sonic performance, folks.

Conclusion

The Souther/Clearaudio Reference combo is one cool-looking record-playback system. It’s compact, exotic, and makes pleasingly vivid-sounding music. Taken as separate products: the Reference turntable features what is clearly a high-quality precision bearing that spins true and is ultraquiet — though I’d want to hear it with an arm that produces really deep bass to be sure. While an inverted bearing has the advantage of putting the platter’s center of gravity way below the point of rotation, it also puts the business part of the system where noise can develop close to the record surface. It’s a testament to the quality of the bearing that the ‘table is so dead-quiet. Since I was unable to audition the $5500 ‘table with other arms, I can’t say for sure what it’s contributing to the sound the combo produces. However, while motor, bearing, and machining qualities are high, so is the price.

If you’re considering a suspensionless ‘table like this, think carefully about where you’re going to put it: footfalls, musical feedback, and other sources of vibration can come back at ya with a vengeance. The Silent Running Audio/Symposium combo helps somewhat.

Once you get it set up correctly, the Souther TQ-1 tonearm does make some rich, lush-sounding, beautiful music. It may make some analytical-sounding recordings sound more like “real” music, and it may make lush-sounding ones even more lush and enjoyable. So if you like the sound, and for the most part I did, knock yourself out—but keep in mind the punishment the stylus is meting out to the grooves of your precious records as it wanders around in search of never-to-be-found mechanical stability.

It sounds like the familiar story of single-ended triode tube amps: The Clearaudio ‘table/Souther arm combo sounds great but in objective terms performs poorly.
“...the [PASS] ALEPH 3 deserves an even higher rating than Class A. It sounded noticeably better than the other [Class A] amps in most respects”
Muse Kastanovich, Stereophile vol. 20 No. 4 April 1997

“...overall, the little [PASS] ALEPH 3 [$2,300] wins on points when compared against the Connecticut behemoth. Astonishing.” [Mark Levinson 333 $8,495]“...it does indeed look that Class A in the “Amplifiers”—section of Stereophile’s “Recommended Components” is in need of an overhaul.” John Atkinson, Stereophile vol. 20 No. 4 April 1997

“PASS ALEPH 3...frighteningly close to sounding like the perfect amplifier.”
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Muse Kastanovich, Stereophile vol. 20 No. 4 April 1997

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“I agree...and, for that matter, you should definitely hear the entire superb/terrific PASS LABS line of amps and preamps at Stereo Exchange – $2,000 – $14,000.”
B.E.V.P.S.X. October 1997
Thorens TRT-2000 AM/FM stereo and RDS tuner

Don Scott

H

I-FI '96 saw the unveiling of new FM tuners from Arcam, Creek, Magnat Dynalab, and a sleek entry from Thorens, which has decided to expand its line of products available in the US beyond turntables.

Although Thorens needs no introduction as an established hi-fi manufacturer, it has an interesting history: The company was founded in 1883 in St. Croix, Switzerland, to manufacture music boxes and movements, and progressed through Edison-type phonographs in 1903 and shellac record players in 1906 to high-end turntables after World War II. (Its TD124 turntable from the mid-'60s is regarded as a classic.) The first electronics appeared in 1933 as various multiband AM receivers, initially in cooperation with Strassfurt Imperial, a German company. In 1948, a remote-controlled console and a large table radio (New Century series) were introduced. The company relocated to Lahr, Germany in 1966. A high-performance receiver, the AT410, was first manufactured in 1976, and a fuller line of components appeared in 1978: a cassette deck, speaker systems, and phono cartridges. [Thorens was also the manufacturer of the professional EMT cartridges. —Ed.]

In 1994–95 Thorens turned its serious attention to the high-end component business (other than turntables) with the introduction of the Consequence Series of solid-state components—the TCD-2000 CD player, TDA-2000 D/A converter, TTA-2000 preamplifier, TTP-2000 amplifier, and the TRT-2000 RDS tuner—along with three speaker systems. (The 2000 series is now available in the US.) Most interesting is the 3000 series: the TRP-3000 tube preamplifier and TRA-3000 tube amplifier with four EL34s per channel, not yet imported here. Based on the current wave of interest in alternate room-heating devices, I urge Thorens to do so—at least on a trial basis.

TRT-2000

The TRT-2000 is a black, rather rugged-looking tuner, narrow and deep, and styled so that two components can be placed side by side in 17" of rack space. The gold plating of its large tuning and power-on knobs, four function buttons, and hardware adds a touch of class. The four front-panel function buttons are for memory input of up to 54 station presets, 16 RDS station types, RDS display modes, and manual input of station names. The green display indicates all modes, frequency, center-tune, signal-strength, and up to 14 alphanumeric characters (8 of RDS). The display can be programmed in German, English, French, Italian, Portuguese, Spanish, Dutch, and the Scandinavian languages.

Certain functions can only be selected with the $99 optional remote control: high- or low-level signal input, direct frequency input of a station, mono/stereo, and recalling up to 16 program types. The same multifunction remote also operates other Thorens system components, and is included with the TCD-2000 CD player. Needless to say, the well-written manual must be read in order to properly operate this tuner's many memory functions and options. The back panel has pressure-type jacks for an AM antenna, 75 ohm F-type for FM, single fixed-level RCA audio jacks, and an attached power cord.

RF performance

Some day I would like a representative from a European manufacturer to visit the US with his or her company's low-selectivity tuner in hand, and test it in New Jersey midway between Philadelphia and...
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New York; Richmond, VA, and Washington, DC; Long Island and Connecticut—or in parts of California, where there is at least one station on every frequency, even when using a simple antenna—and see if that tuner would get more than 20% of the 100 possibilities without overlap and/or splatter. Then someone would finally realize that a tuner must be built for the market it is to serve.

As you may gather from my dismay, the Thorens TRT-2000 is not a highly selective tuner; it's best suited for sparse RF environments, where it does well. What signals it could get clearly were distinguished by very low background noise, even in stereo. Although the RF circuitry is basic textbook and built around the popular Mitsumi front-end, the well-filtered and regulated power supply undoubtedly contributes to the TRT-2000's low noise and distortion, and gives it some merit as an audiophile product. Usable sensitivity was not overwhelming, but typical (0.95µV/10.78 dBf), and will be adequate as long as a good antenna is used. All other RF factors were average, and are listed in the specifications sidebar.

Sound
My reference at this time for A/B-ing and judging overall fidelity, particularly in the low-frequency range, is a Rotel RHT-10, stock but for an entirely different four IF-filter set. Off-the-air reference audio is from WGIR (101.1 MHz, Manchester, NH) for rock. It is one of the few stations that gets Alice in Chains' "Over Now" right without any rust—tight and distinct. For classical and jazz, Long Island Public Radio, WPBX (88.3MHz, Southampton, NY) and WFCR (88.5MHz, Amherst, MA) provide clean listening. Classical WFCC (107.5MHz, Chatham, MA) is also a high-quality signal frequently used for evaluation and listening purposes.

As mentioned in the RF section, distortion was noticeably low. Voices on the Saturday-afternoon Metropolitan Opera broadcasts sounded relaxed and natural, although slightly milked of ultimate detail. The flavor of the overall audio was smooth, with deep-reaching bass, again slightly lacking detail on string bass and bass lines of hard rock. Midrange, treble response, and stereo separation were on a par with other good tuners, but did not stand out with a "WOW!" No SCA birdies were heard.

RDS

Approximately 600 stations now incorporate the Radio Data System. If broadcast by a station, RDS data are sent on a 57kHz subcarrier along with other subcarriers and the main programming. The sender can encode call letters, station type, alternate frequencies, selection—now-playing information, time codes, traffic information, weather warnings, advertising, pleas for contributions, or whatever a station desires. RDS-equipped receivers can retrieve this information and search for selected types of stations if that information is being broadcast: COUNTRY, CLASSICAL, NEWS, TALK, JAZZ, etc. For the scrolling radiotext mode, a maximum of 67–70 characters can be sent and displayed. The TRT-2000 performed well in the RDS mode, obeying its listener—selected functions without fault.

AM section

AM is not necessarily a poor-fidelity medium. In fact, the present FM stereo system transmits the L-R portion of its stereo signal on an AM subcarrier at 38kHz. This AM portion is not inferior in any manner to the L-R main FM carrier, and follows all the rules for AM modulation. Therefore, it can be concluded that there is nothing in the laws of physics to dictate that AM should take a back seat to FM. The problem is not with the medium or the quality of the transmitted audio from many AM stations (particularly the Canadian outlets), but from AM receiver designers who are dedicated to duplicating fast—food—drive—up—window quality in audio.

Although not the best AM tuner section I have seen or heard—that prize has not yet been won—the TRT-2000 is a step in the right direction. It produced quiet, low-distortion audio with balanced tonal response in medium—strong signal areas using a short (10–20) wire antenna. The instruction manual states that the two AM antenna terminals (ground and +) can be used for a frame antenna (large loop); however, one is not included with the tuner, nor is it available from Thorens. Experimentation with 35' of 20-gauge wire wrapped tightly and without overlap on one of the end pieces of the tuner's styrofoam packing material produced fairly good directional results. I used about 8' of cheap 18-gauge speaker wire as the antenna leads, each conductor connected to one end of the homemade loop antenna. Further experimentation would probably yield better reception.

Conclusion

With the Grundig Fine Arts Series (reviewed Vol.16 No.2) and the Onkyo T-431R (Vol.18 No.10), the Thorens TRT-2000 is the third RDS tuner I've reviewed. The Onkyo and Thorens performed satisfactorily as RDS decoders on signals above 5µV/25.20dBf; the Grundig retrieved RDS information with slightly less signal. However, what is of most concern is overall RF performance and sound. The Onkyo tested as the most selective of the group, but had the lowest sonics. The Grundig proved the most sensitive, with very clean sound, but was on the too—bright side because its de—emphasis was not to the US standard.

The Thorens's evaluation falls on the low side of middle. It sounds nearly as clean as the Grundig, but with less good RF performance than the other two. The pluses are that the TRT-2000's AM, although mono, is worthy of playing through a hi-fi system without requiring gag—and—barf precautions. In terms of styling, the Thorens is a winner, and looks at home with the company's other components.

Herein lies my very limited recommendation of the TRT-2000: that it be considered in an all—Thorens system, or by the purchaser who wants reasonably good AM and FM, with the advantages of RDS and good looks.
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**Stereophile, March, 1996, Interview, Ulrik Poulsen And His Amazing Flat Cables, p. 115, Jonathan Skull.**

> "And then there is Dan D'Agostino at Krell, who has become so enthused that we are now developing a special 7-gauge cable especially for him. It'll be called Krell/Goertz."

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**Price Per Pair**

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<th>Model</th>
<th>MI AG 3 “Faberge” 7 AWG High Purity Solid Fine Silver. Dimensions: 1.3&quot; x 0.08&quot;</th>
<th>$156</th>
<th>8' Spades/Banana/Pin 8&quot;...$2544 10&quot;...$3168 12&quot;...$3792 Silver Spades 8&quot;...$2568 10&quot;...$3192 12&quot;...$3816 15&quot;...$444</th>
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<tr>
<td>MI 3 “Divinity” 7 AWG High Purity Oxygen-Free Copper. Dimensions: 1.3&quot; x 0.08&quot;</td>
<td>$256</td>
<td>8' Spades/Banana/Pin 8&quot;...$464 10&quot;...$568 12&quot;...$672 Silver Spades 8&quot;...$488 10&quot;...$592 12&quot;...$696 15&quot;...$856</td>
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### GOERTZ Recommened Component 4/1997, p. 153, Goertz AG 2 and MI 2 $3 Speaker Cables.

> "JS was quite taken by these 7-gauge high capacitance silver cables calling them ultra-clean & delightfully fast. He also admired their extreme high resolution and wonderful spatial qualities..." (The less expensive copper version is a LB favorite)

**Stereophile, March 1996, page 118, Jonathan Skull.**

> “These cables sounded, above all, ultra clean and delightfully fast. You’d think a flat ribbon would be an invitation to the RFI Heeble-Jeebies, but this was absolutely not the case. Quite full bodied, apparent DC-to-light extension, extreme high resolution, wonderful spatial qualities, these cables let the Judes amplifiers be all they might.”

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### GOERTZ RECOMMENDED CABLES 1996 – 1997, Ulrik Poulsen and His Amazing Flat Cables, Jonathan Skull.

**Skull:** “Okay, let me carry out my earlier threat and come back to dreaded RFI. Obviously your cable isn’t a twisted pair of a type that fights RFI, so...?”

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**GOERTZ** Prices and specifications subject to change.
Golden Sound DH cones and squares

Jonathan Scull

Let's get ceramic! Golden Sound DH Cones are made of a "high-tech" ceramic material that the paperwork claims is used in the Space Shuttle and advanced military rockets. "They have a hardness degree of 9.5, surpassed only by diamond. Their design is based on the theory that the ability of materials to minimize vibrations and resonance is correlated to the hardness of the materials." They can be had in four sizes: Jumbo at $70/three, Large at $50, Medium for $40, and a mere $20 for Smalls. The Cones are nicely presented in a cozy little padded box.

DH Squares are fabricated from graphite-based composites and are meant to be used as cost-effective footers on their own—or, better yet, under the ceramic Cones. "Since DH Squares will help disperse vibration much faster than normal material, it will boost the performance of the DH Cones by 50%." All right then! And at $10 each, they're a real bargain.

I began with a lovely CD, Music for Flute & Guitar, with Gunilla von Bahr on flute and Diego Blanco on guitar (BIS CD-90). I love the "Tambourin" of F.J. Gossec (1734-1829), arranged here by one of my favorite guitarists, Laurindo Almeida. From the booklet: "Gossec is something of a French Haydn and "This freely modernized version is really a dance from Provence played on the one-handed flute and large drum (tambour)."

I began with the DH Cones by themselves. The entire presentation sounded faster and more distinct than with the Harmonix RFS-66 Large Tuning Feet normally in place. (I had better results with RFS-65 Small Tuning Feet, but more about them in another Footh Report.) I noted a lift in overall transparency, with a slightly tighter focus. The tambour strokes sounded a tad more distinct and sharp, balancing the initial transient and the follow-on burst very well. While the midrange was somewhat less well developed than with the Harmonix footers, it was certainly rendered with greater transparency. The top end sounded very open and quick, if a tad less sweet than what I'm accustomed to.

Fitting a DH Square under each of the Cones, I simply heard all of the good qualities I'd noted more fully developed.

The sound became more sweet up on the Squares, the flute a little more cutting, powerful, and pure-toned than when using the Cones alone. The guitar sounded a tad less harmonic even as the transients were better defined. One other Astounding Tuning Factoid: the soundstage moved more to the rear with the Cones alone, and farther still with the Squares placed under them. Go figger...

Listening to "Sankofa," from Cassandra Wilson's Blue Light 'til Dawn (Blue Note CDP 7 81357 2), the results were consistent. I heard that welcome lift and transparency in the midrange and up, the bass became tighter, and all three vocal parts were slightly more distinct from one another. Adding the Squares to the Cones recovered more harmonic bloom while retaining enough of the fast, transparent quality to make it worthwhile.

In general, the DH footer solution created a wonderfully palatable and airy sonic construct. The highs and upper midrange were beautiful and open, the midrange had just the right amount of juice, the lower midrange wasn't boomy at all, and the bass extension was excellent (if not digging so deeply as do some unusual footers from Austria I'll be coming to in a future issue). Nevertheless, the nether regions were just fine, and always in proportion to the rest of the presentation.

Using the DH Squares alone provided a pleasant surprise. The sound was softer than the Cone/Square combo by quite a bit, but nevertheless got high marks for a sweet and pleasant presentation. If one somewhat more restrained and closed-in than the full kit managed. Overall, DH Cones and Squares came out very near the top of the heap.
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Mark Levinson No.380S preamplifier

"Comping," they call it at Madrigal.1 Once a circuit and its board layout have been finalized, active and passive components are substituted one by one in an exhaustive series of listening tests to determine the places where use of a premium part, or one of closer tolerances, results in an audible benefit. This fine-tuning process cannot be open-ended, however, as products do have to, shipped. So what happens when new parts become available, or new manufacturing processes allow a better-sounding part to be used without financial penalty?

All manufacturing companies deal with this question continually, but with Madrigal's Mark Levinson brand, we've become accustomed to the decimal progression: the No.20 monoblock became first the No.20.5, then the No.20.6; the No.30 D/A processor metamorphosed into the No.30.5, the No.31 transport into the '31.5. But the pattern was broken when the substitution of a new printed-circuit-board material transformed the No.38 preamplifier into the No.38S.

The Mark Levinson No.38S has been my reference preamplifier for the past three years,2 but as a result of major "comping," the '38S was transformed this past summer into the No.380S. The circuit and pcb material are the same, the remote-controlled, MDAC-based, 0.1dB-step, balanced volume control is the same, the appearance is the same, even the price ($6495) is the same — but the substitution of 106 passive components in strategic places resulted in a significantly larger sonic improvement that Madrigal felt a new model designation was called for. So how does the new preamplifier sound?

First, don't listen to the piece until it's warmed up — out of the box, my sample was rather upfront in its presentation. But after two hours it settled down, and I was able to do some serious listening. I used both the '380S and the original review sample for extended periods, as well as doing A/B comparisons at matched levels (something made trivially easy by the preamps' repeatable and well-calibrated level settings).

Second, how do you describe the sound of something that's superficially identical to your reference, but better? Audiophiles habitually refer to sonic differences between two components in terms of differences in frequency balance: A had more bass, B had more treble, C had a depressed midrange. But when comparing the two Levinson preamps, I kept hearing similar they were on these terms. There were no response or balance differences that I could confidently hang my hat on, yet there was a musical rightness to the sound of the '380S that I consistently preferred. Stereo images seemed better defined, and individual acoustic objects within those images had more of a rounded, fleshed-out character. In the deathless prose of Sam Tellig, there was simply more "there" there. And more "air" there, if you will.

This was an area where the original '38 had been showing its age in light of the performance offered by two of the preamps I've been listening to in Wes Phillips' system: the Conrad-Johnson Premier 14 and Ayre K-1. Not that the '38S was a sonic slouch — far from it. In fact, when we used it to provide some gain to drive the disc-cutting amplifiers when we mastered Stereophile's Sonata LP (see "Cutting Up," Vol.20 No.3), we were impressed by how little it got in the way of the music. But the No.380S just went that essential bit further. A small difference in objective terms, but one that is, subjectively, enormously important. I can confidently recommend the No.380S as my solid-state preamplifier of choice.

1 Madrigal Audio Laboratories, Inc., 2081 South Main Street, P.O. Box 781, Middletown, CT 06452. Tel: (860) 346-0896. Fax: (860) 346-1540. Internet: http://www.madrigal.com .

2 My Stereophile review appeared in July 1995 (Vol.18 No.7). You should refer to that review, and Robert Harley's earlier review of the No.38 (Vol.17 No.8), for functional and technical descriptions.
HARDWARE NEWS

In analog accessory news, the Orbitrac 2 is now in stock, at $34.99. As vinyl junkies and Stereophile readers know, Michael Fremer started a virtual one-man campaign to bring back this vital record-cleaning accessory. Black Diamond Racing has gone one better with their new reference isolation platform, The Shelf for the Source, used to great effect under CD transports and turntables. Also covered by Michael Fremer (March '97) is the Disc Doctor Miracle Record Cleaner and accompanying brush. A pint of fluid (concentrate) for just $19.99; brushes are $24.99. One customer sums up the response we've been getting: “Changing to the Disc Doctor’s fluid is comparable to making the switch from a dry brush to a vacuum record cleaner, easily the quietest surfaces I’ve ever heard.” See for yourself! The new Grado Reference phono cartridges provide wonderful sound for the buck, starting at only $35, with ten models up to $1200. We especially like the Platinum, which competes with some other well-known names at $300 retail. A British company called Milty has an analog reissue of their own: the Zerostat anti-static gun, for LPs (which they invented), at $49.99. Those who remember the '70s will remember the original Discwasher version of the Zerostat. Sennheiser has a winner in the HD600 headphones ($349.99), the new top-of-the-line, with even more transparent sound than the Class A HD580, John Atkinson’s reference. For the single-ended diehards in the crowd, 3M has new vibration control sheets ($8.99 or five for $29.99) and tube dampers ($3.49). These guys really know what they’re doing, and at these prices, you can afford to experiment! We’ve got Sam Tellig’s favorite contact cleaners, the XLO Contact Enhancers, at less than a buck apiece ($2.49 for ten or $44.99 for 50). While Audio Alchemy continues its reorganization, we’ve snapped up remaining stock — and we’ve got some very popular models at prices you won’t believe. (Let’s just say that we’ve seen most used pieces selling for more.) We’ve got the AD 1.2 upgrade chip for $99.99, plus the new Monolithic Sound power supply upgrades, which far exceed the performance of any Audio Alchemy original power supplies. New accessories are in and exciting! Express Machining has introduced “The Lift,” the only tonearm lift available new today! Place this near the base of your manual tonearm, and it lifts at the end of an LP! Michael Fremer of Stereophile sings its praises too. In chrom for $99.99 or gold-plated (wow!) for $129.99. We’ve also got anti-static spray from Nordost, at a $29.99 retail. Thor Audio has a new burn-in device called the “Phono Burn” ($324.99) which burns in an entire system completely by simulating an analog cartridge output instead of using digital hash.

Breakthrough.

The underground mags are often the first to identify breakthrough products, and the Electro Glide AC cable is another first for these small but important publications.

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Robert Baird

Music fans all have their weird, obscure favorites. In fact, it's a badge of honor to torment friends and foes with casually tossed-off references to long-dissolved bands, one-album wonders, and composers who wrote two string quartets and promptly died.

One of my innermost musical obsessions has always been Rainer Ptacek. In my travels, it never ceases to amaze me how, when his name is mentioned, closest fans step out of the woodwork. I wish I had a nickel for every time some music collector reacted to the mention of Arizona (Ptacek's home) with a zesty pump.

"Oh, do you know about Rainer?"

Though Rainer (he goes by the single name, pronounced RYE-ner) is one of this country's least renowned songwriters and instrumental virtuosos, in almost 15 straight years of writing about music I have yet to meet an artist I respect or admire more. He is, to use a cliché, the genuine article. Of all the white men I've ever seen and heard play the blues, Rainer is far and away the most inspired and inspiring, both in terms of his expressive voice and his twisting, agile hands on electric, acoustic, and especially National Steel guitar.

But he's much more than a bluesman. As a founder of one of alternative music's most unpredictable acts, Giant Sand (Trouser Press nails their style best: "a play-free-or-die aesthetic"), Rainer is both a national cult figure and the spiritual center of the Tucson scene. With his electric trio Das Combo, he showed he could get funky and downright rockin'. But it's as a solo singer, sitting on a stool singing his own sly, wise, sad originals, that Rainer's at his best.

Born in East Berlin and raised on Chicago's southside, Rainer is a long-time resident of Tucson, Arizona. For a decade or so this quiet craftsman and I lived in that same desert burg—he hit the brilliant player, I the eager, spongelike music editor then deep in the throes of being a club rat. In many ways, he single handedly kept my spirits up. When I'd seen one band of hair farmers too many or had tumbled into a depression about the miles between my ears and the nearest real opera (Rainer's an opera fan as well), I could always count on the fact that there was still one world-class talent in town to believe in.

That goes for Rainer offstage as well as on. Instead of giving in to road life/no life, Rainer decided to stay home and raise a family. And though he and his wife Patty have been together 17 years and have three great kids, the difficult act of balancing family and career was completely lost on this young rock critic. My answer, of course, was to write a snotty piece about how local musicians deal with not being big stars. To find out how Rainer dealt with "failure," I descended into the dusty bowels of Tucson's famed Chicago Music Store to find him at his day gig, repairing stringed things of every genus: Telecasters, Flying V's, Guadagninis, ancient banjos, even cellos that looked as if they'd been owned by a Townshend or a Cobain. Instead of throwing me out on my cheeky ass, Rainer pondered my insulting question, looked me in the eye, and summoned up a concise, "well, duh" reply that exposed (even to me) the naiveté of my supposed thesis. From then on, I knew that if I wanted wisdom instead of self-promotion, soul instead of vapidness masquerading as profundity, the hobbit-hole basement of the Chicago Store was Tucson's Delphi.

A lot of musicians have felt the same way. Guitar players in particular are drawn to Rainer. Every time Chris Whitley or the late John Campbell came to town to do a show, they'd turn up at Rainer's house to pay their respects. Every once in a while a big hmo pulls up and out jumps one of Rainer's biggest admirers, Z.Z. Top's Billy Gibbons. Rainer's fame even spread to England, where, of all people, Led Zeppelin throat Robert Plant became a fan. A few years ago, Plant and Ptacek recorded a series of limited-edition singles together.

In the spring of 1996, just after the birth of his first daughter, guitarist/songwriter Rainer Ptacek was diagnosed as having malignant and inoperable brain tumors. It quickly became apparent to him and Patty that if the cancer didn't kill him, the medical bills would.

In August, a tribute record of Rain-er's music, Inner Flame, was released on Atlantic Records. The proceeds will go toward his medical bills. Organized by Robert Plant and Giant Sand's Howe Gelb, this album features Rainer's spare, prophetic songs performed by Plant and Page, Emmylou Harris (now there's a juxtaposition you don't see every day), Evan Dando, Victoria Williams, Vic and Tina Ches-nutt, P.J. Harvey, Madeleine Peyroux, and others. Given that variety, the disc sounds about like what you'd expect—a bizarre mishmash. Like the original versions, most of the tunes here have the kind of austere arrangements that accent Rainer's evocative imagery and mystical melodies. Rainer himself duets on two songs, and both his voice (which reminds some of Dylan, others of Mark Knopfler) and his guitar work are strong throughout. Predictably, Harris' rendition of "The Good Book" is ethereal. Evan Dando's "Rudy with a Flashlight" is surprisingly tender. There are a few missteps: P.J. Harvey's noisy stab at "Losin' Ground," where she runs her voice through a processor, is annoying and the Chesnutt's cover of "Where's That At?" is too slack. Overall, though, it's a very good effort.

While this tribute is a worthy idea, the best way to experience Rainer is to go out and order some of his records. The best are Rainer & Das Combo, The Texas Tapes (1993, Demon Fiend CD 734); Rainer & Das Combo, Barefoot Rock with... (1994, Demon Fiend CD 756); Rainer, Nocturnes (The Instrumentals) (1995, Glitterhouse [Germany] GRC 363), and my favorite: Rainer, Worried Spirits (1992, Demon Fiend CD 723).

Just as this issue was going to press, Rainer's condition took a turn for the worse. Once remissive, the cancer had returned more virulent than ever. I fear that by the time you read this he will be gone—leaving his music and the way he lived his life as the seeds of a legend that will, in that cruelest of all artistic ironies, allow this beautiful man and his artistry to grow infinitely larger in death than they could in life. Vaya con Dios old friend.
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Like many angular talents, Nina Simone is a study in extremes—alternately needy and aloof, earthy and regal, agitated and serene. Along with her poise and insight, there’s always been a vehemence and indignation that simmers on the surface of her songs. Simone is a quintessentially American performer, albeit one who renounced her homeland in 1969 and wrote in her 1991 autobiography, *I Put a Spell on You*, “every time I arrived in the USA something terrible happened.”

One would be hard-pressed, however, to find a musician more reflective of the place and period that shaped her art, though she’s by no means a chameleon. To the contrary, while the world changed around her, Simone simply drew upon a musical base so broad that folk, jazz, soul, and cabaret clichés would at various times claim her as their own. Meanwhile, she didn’t feel much of a need to answer to any of them.

A la Billie Holiday, Simone’s phrasing is conversational. She is, however, more histrionic than most of her jazz peers, frequently exploring dramatic extremes that owe more to Judy Garland than to Ella Fitzgerald. Her husky, emotive alto can be warm and inviting in one breath, only to turn strident and a little scary the next. Never one to be accused of prudence, Simone is apt at any time to defy good musical sense in the interests of discovering the emotional essence of a lyric.

Born Eunice Waymon on February 21, 1933 in Tryon, North Carolina, the tall, at times masculine-looking Simone displayed her musical gifts early. Her family couldn’t afford to pay for lessons, but a local piano teacher took up her cause, organizing a community fund to pay for the youngster’s classical schooling. She graduated as valedictorian of her high school in 1950 with a mission to become a barrier-breaking black concert pianist. At first rejected by Philadelphia’s Curtis Institute, she later studied at Juilliard. Skilled as an accompanist, her career as a singer had an unlikely beginning: the Midtown Bar & Grill in Atlantic City. On her first night there (which according to her was also the first time she’d ever been in a bar), she befuddled bartenders with piano-only improvisations based on classical and gospel works, one lasting three hours. While at the Midtown, she adopted the alias Nina Simone (Nina was a nickname from a boyfriend: Simone sounded classy to her) so that her Methodist minister mother wouldn’t find out where she was working, and, after much coaxing from the lounge owner, finally began to sing.

Three years passed before Simone first entered a recording studio. When Sid Nathan, the head of Bethlehem Records, routinely decreed the songs she’d cover and the musicians she’d work with, Simone, who still fancied herself a momentarily misplaced concert pianist, replied that things would be done her way or not at all. Thus she established a precedent for tackling a staggering array of standards, folk songs, hymns, and contemporary pop hits. She did so with a musical sensibility that embraced nearly the full range of American music while also incorporating African and European influences.

Little Girl Blue (Bethlehem 30042) was an auspicious start—it included her sole American chart hit in Gershwini’s “I Loves You Porgy” as well as a jaunty version of “My Baby Just Cares for Me” that climbed the UK charts nearly three decades later when Chanel used it for a perfume commercial. (With characteristic corrosiveness, Simone has dismissed “My Baby” as “one of the slightest songs I’d ever recorded.”)

In 1959 Simone moved to Colpix, the recording adjunct of Columbia Pictures. She remained there through 1964, marrying ex-cop Andy Stroud in 1961 and installing him as her manager the next year, shortly before their only child, a daughter, was born. *Anthology: The Colpix Years* (Rhino R2 72567) is a superior overview of that particularly prolific period. Ginned from 10 albums (five of which are still available domestically or as imports), it presents the singer on low boil. The selections range from such sophisticated standards as Ellington’s “Solitude” and Billie Holiday’s “Fine and Mellow” to traditional (“Little Liza Jane,” “Cotton-Eyed Joe,” “Black is the Color of My True Love’s Hair”). It’s apparent that Ray Charles’ early ’60s crossover success swayed Simone to take a more commercial direction. Thus, the likes of Ellington’s “Do Nothin’ Till You Hear from Me” are marred by hackneyed arrangements and florid background vocals.
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Five of Simone’s Colpix records were concert recordings, a setting that suits her idiosyncrasies while protecting her from overproduction, and one she’s returned to frequently. At the Village Gate (Roulette CDP 7 95058 2) captures a particularly intimate 1961 performance. Backed by a trio that includes her favorite sideman, guitarist Al Shackman, Simone ranges from the yearning “He Was Too Good to Me” to a sputtering eight-minute-plus version of “Bye Bye Blackbird” that displays her keyboard skills.

In 1964 Simone moved over to the Philips label. Most of her records from ‘64 through ‘67 are available in a series of single-CD twofers: In Concert/I Put a Spell on You (Mercury 846 543-2), Pastel Blues/Let It All Out (Mercury 846 663-2), and Wild is the Wind/High Priestess of Soul (Mercury 846 892-2). All are worthwhile, though Pastel Blues is particularly consistent. Simone was ignited by the civil rights movement, and her fed-up tirade “Mississippi Goddam” (“And I mean every word of it!” she testified before a New York crowd) surfaces on In Concert, a riveting 1964 document that also includes a stunningly theatrical version of Weill/Brecht/Blitstein’s “Pirate Jenny.” Also available from the Philips years are Broadway Blues, Ballads (Verve 314 518 190-2) and Don’t Let Me Be Misunderstood (Mercury 834 308-2). The latter finds Simone in fine voice, but the lush arrangements are clichéd and distracting. The latter would have been more useful as a period survey had it included something in the way of informed liner notes and session credits.

An increasingly politicized perspective informed Simone’s late-’60s work. Her friends included Black Power firebrands H. Rap Brown and Stokely Carmichael, and she made no attempt to disguise her militancy. “The King of Peace is dead,” she announced to an audience the evening after Martin Luther King Jr.’s assassination. “I ain’t about to be nonviolent, honey!” In the late ‘60s she left the US for political reasons, going first to Barbados, then on to Liberta and France.

Simone’s RCA years are best explored through three nonoverlapping collections: The Essential Nina Simone (RCA 66307-2), The Essential Nina Simone, Vol 2 (RCA 66428-2), and The Best of Nina Simone (RCA 4374-2-1). Characteristically, she plunged into a range of songbooks and styles between 1966 and ‘73, when she put out nine LPs for Nipper. The Essential volumes skip about deliberately, from then-current top-40 covers (“Ain’t Got No” / “I Got Life” from Hair, “Angel of the Morning”) to rock (Dylan and George Harrison were favorites) to supper-club standards (“My Way,” “Cherish”). These compilations do a good job of sorting the wheat from the chaff, as does Saga of the Good Life and Hard Times of Nina Simone (RCA 66997-2), a smartly sequenced 16-track vault collection that surfaced earlier this year.

The Tomato Collection (Tomato/Rhino R2 71712) is a wandering profile of the first decade and a half of Simone’s recording career. Alternate takes, most of them live, of a selection of Simone stunts (“Cotton-Eyed Joe,” “House of the Rising Sun,” “Four Women,” “See Line Women”) are supplied, and there is no shortage of highlights, along with a few blunders. If you’re looking for a single two-disc introduction to Simone’s artistry, however, The Colpix Years is the superior summary.

Simone has recorded erratically since parting with RCA in 1974. During her self-imposed exile she’s been affiliated with a variety of labels, with several titles available only as imports. Originally cut in Brussels for the CTI label, 1978’s Baltimore (Epic/Legacy ZK 57906) is something of an oddity. The repertoire ranges from the Randy Newman title track to the Hall and Oates hit “Rich Girl” to the traditional “Balm in Gilead.” (Simone complained that she had “no say whatsoever” in the song selection.) Sidemen include studio pros Andy Newmark, Will Lee, and Eric Gale, who explore reggae and rock rhythms that have since dated a bit. Nevertheless, the material matches her maturing voice, making Baltimore an estimable accomplishment.

Live at Ronnie Scott’s (DRG 91428), recorded in London in 1984, is an intense set highlighted by a medley of Simone’s heartbreaking original, “If You Knew,” with Brecht/Weill’s “Mr. Snith.” This album towers over the rather flat Let It Be Me (Verve 831 437-2), cut later in the decade at the Vine St. Bar & Grill in Hollywood. Finally, A Single Woman (Elektra 61503-2), her lone American studio album of the past 19 years, is a heavily orchestrated and reflective collection. One can quibble with the material (three Rod McKuen songs!), and piano chores are handled by LA vet Michael Melvoin on all but one track. Still, “Dr. Nina Simone” (as the credits read) remains a commanding vocal presence. Because the nights when she recorded this disc were such a huge standing-room-only success, Ronnie Scott’s booked her for a return engagement a few weeks later. In typical Simone fashion, she did not show up.

In her autumn years, Simone is more elusive and eccentric than ever, yet still full of her trademark fire. Now living in the south of France, she’s recently had two run-ins with the local law. She received a suspended jail term and was ordered to seek counseling after firing a scattergun at a pair of teens who were making a racket near her home. A short time later she was found guilty of causing and fleeing an accident that injured two motorcyclists. Hardly the type of behavior one anticipates from an esteemed song stylist nearing her 65th birthday.
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Hildegard von Bingen was born 900 years ago, when the shadow of Imperial Rome still lay long over Europe. She first saw the light, literally and figuratively, in an age of absolutes. Troubled by visions as a child (she called it "the living light"; the modern diagnosis is migraine with severe visual disturbance), she was given at the age of eight to a Church venial and simoniacl, whose absolutes were breaking down under simultaneous pressure from the logical disputations of Pierre Abelard in Paris, and the simple charismatic piety of the Albigensians in southern France. During her long life, Hildegard became famous as a mystic and seer, and also as the intensely practical founder and guardian of two monastic communities of women. The question is: Why the sudden modern fascination (evidenced in a spate of record releases) with a woman whose life and work are almost incomprehensible in 20th-century terms?

I believe the answer to this question lies, at least partly, in what early-music conductor Marcel Pérès calls "...a 'planished' conception of spirituality illustrated by the 'New Age' movements." It is easy to dismiss the New Age salad-bar approach to faith, and discuss Hildegard as though she were just another medieval liturgical composer, but this is to miss her essential nature.

I recently saw a television program that compared the logical, witty, almost-modern figure of Abelard with the ascetic and visionary Bernard of Clairvaux; needless to say, the latter came off far worse. Like the verities of the Middle Ages, this modern absolute—the unquestioned denial, as Chesterton wrote, that any miracle at all can take place—is also breaking down. The followers of the New Age who adopt Hildegard as one of their own are more right than we might care to admit. After all, what other 12th-century mainstream Benedictine liturgical composer created an artificial language, or gave such a prominent place to women in the celebration of Christian ritual?

The modern women of Anonymous 4 seem well aware of the essential contradictions in Hildegard's life. They have chosen as their program an abbreviated reconstruction of the Divine Office for three of the canonical Hours of the feast day of St. Ursula, for whom Hildegard held a special reverence (see sidebar) To flesh out this reconstruction, they use the works of contemporary composers where no appropriate music of Hildegard's has survived. This serves not to dilute Hildegard, but rather to emphasize those eccentricities of style that set her apart from her contemporaries. Compare, for example, the straightforward text of the hymn "Jesu corona virginitum" (from a 13th-century manuscript), to the sophistication of language and metaphor of Hildegard's "Cum vox sanguinis." Hildegard von Bingen may have been an unpolished Latinist and an untrained musician, but she was able to achieve remarkable effects, and find a considerable language to express her revealed view of God and Man.

In choosing which of Hildegard's compositions to include, Anonymous 4 has placed some emphasis on those that employ erotic imagery (mostly derived from the Song of Songs) to describe the relationship between the martyred Ursula and her heavenly Lover. While Hildegard is hardly alone in such analogies between the sensual and the spiritual, the sheer intensity of her images has a remarkable power. Consider the opening passages of "Favus distillans," in Susan Hellauer's lovely and evocative translation: "A dripping honeycomb was the virgin Ursula / Who longed to embrace the lamb of God, / Milk and honey under her tongue..."

I have already risked my own credibility as a critic by gushing with effusive praise for the singing of Anonymous 4, so why stop now? The medieval mystic Julian of Norwich spoke of "self-naughting," the total abnegation of the ego, as essential to achieving the goal of oneness with God. On a more earthly plane, this describes the vocal achievement of Anonymous 4: they simply become a part of the music. Their performance of "Favus distillans" will dazzle you, its combination of the erotic and the spiritual being carried, like Hildegard's feather, on an upward wave of breath and sound. The hypnotic quality of Hildegard's music, intended to encourage the listener in the contemplation of the sacred text, is perfectly conveyed.

In this they are aided by the excellence of the recording. Robina Young has (as usual) avoided the popular equation between lots of reverb and mysticism. It's true that Anonymous 4, when performing live, prefer large reverberant spaces, and the Campion Center where this CD was recorded is such a place. But the microphone placement achieves a perfect balance between direct and reflected sound, and nothing is artificially emphasized; this is what a live performance would sound like.

What about all these virgins?
The legend of St. Ursula and the 11,000 virgins runs thus: A British princess was betrothed to a pagan king. Wishing to avoid marriage with an infidel, she delayed the wedding on the pretext of making a pilgrimage. She sailed off with a thousand local virgins; when word got out, 10,000 more joined up. They made it to Rome, but on their way home stopped off in Cologne, where they were promptly martyred by the Huns (in spiffy 15th-century armor, to judge from Hans Memling's painting). The original versions of the story mention only 11 virgins max, but what are a few orders of magnitude among friends? The metaphorical quality of the story must have profoundly affected early Christians; the legend appears constantly in texts well before and after Hildegard. It was not until 1969 that the cult of St. Ursula was formally suppressed.

—Les Berkeley
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BEETHOVEN
Piano Concertos 2 & 5
Evgene Kissin, piano; James Levine, Philharmonia Orchestra
Performance ****
Sonic ****

It\'s possible for anyone in the late 20th century to deliver a fresh response to Beethoven\'s much-played concertos? Maurizio Pollini\'s last set of Beethoven piano concertos, released a few years ago on Deutsche Grammophon, left one in despair. How could a pianist of his patrician talents turn in performances so artistically tired? With Evgene Kissin\'s recording of Concertos 2 and 5—with any luck, the first in a series—hope is restored. While this recording doesn\'t depeoe any of the greats, it sits well alongside them.

Kissin\'s performance of the modest, youthful Concerto 2 (actually the first to be written) is perhaps the most remarkable achievement here. The piece\'s thematic material often seems half-formed and fragmentary, as if pointing the way to greater achievements to come. Kissin makes these fragments seem poetic in their incompleteness, partly with his imaginative turns of phrase, partly through the harmonic richness he gives to everything he touches. He also makes each new section seem like a major event, announcing it in transitional passages played with extraordinary flair.

Kissin\'s "Emperor" doesn\'t attempt to get away with mere technical heroism, or to breeze through on Beethoven\'s long-lined lyricism. It\'s a boldly drawn interpretation, with much credit going to James Levine\'s ready, eager accompaniment. Kissin\'s hallmark is the way he organizes the phrases to form an engaging sense of narrative. He also9 conspires with Beethoven to confound expectations. Beethoven was great at hinting at the arrival of a cadence, by-passing it completely, then showing you the most glorious manifestation of whatever musical idea he was developing. Kissin underscores this by using subtle nihato during these hinted cadences, or sometimes by speeding up in ways that only add to the excitement.

This is an "Emperor" with grandeur. Many pianists have grasped for that quality, but it usually requires a singular relationship between pianist and conductor, such as existed between Edwin Fischer and Wilhelm Furtwängler. More recently, Daniel Barenboim has attempted to achieve it on his own in concert, with eccentric results. With Kissin, such grandeur seems effortless. Maybe such qualities are possible only with full-time pianists.

—David Patrick Stearns

BENJAMIN BRITten
The Rescue of Penelope, Phaedra

Dame Janet Baker, narrator; Alison Hagley, Athene; Catherine Wyn-Rogers, Artemis; John Mark Ainsley, Hermes; William Dazeley, Apollo; Lorraine Hunt, soprano (Phaedra); Halle Orchestra; Kent Nagano
Performance ****
Sonic ***

In 1942, Benjamin Britten, who had been granted conscientious objector\'s exemption from military service, began work on several BBC radio projects. This work led to a unique collaboration with Edward Sackville-West: composing incidental music for Sackville-West\'s radio play, The Rescue of Penelope, a dramatization of events from Homer\'s Odyssey. This world-premiere recording of the "concert version of the radio drama" is a reworking of the original radio production, which included considerably more dialog and an hour and a half of music. In order to make a cohesive concert piece, arranger Chris de Souza has bound musical sections from the original score, including vocal solos, together with a narrative text.

Despite its virtual dismissal by Britten biographer Humphrey Carpenter, who lumps all of Britten\'s radio compositions together under the label "BBC ephemera," The Rescue of Penelope actually reveals a great deal about Britten\'s approach to even this presumably mundane wartime activity. Obviously, the composer took his "ephemera" quite seriously—the music accompanying Dame Janet Baker\'s dramatic narration is indicative of great care, imagination, and thoughtful application of the composer\'s considerable creative powers.

As with all successful collaborations of words and music, the music doesn\'t just accompany the text; it helps elucidate and contextualize it. Certain themes and particular instruments accompany events, describe characters, and identify moods and atmosphere. Of course, these techniques have been used before, but Britten\'s devices blend perfectly and naturally into the musical and structural fabric: they don\'t call intrusive attention to themselves.

Strewn throughout the piece are many attractive melodic passages and orchestral expressions that make you wish for more: the little melody that wants to become a full-fledged song in the exchange between Hermes and Athene in Part Two; the orchestral introduction to that same scene; and the impressive orchestral conclusion. The performances, from Baker\'s narration to the four solo voices to the orchestral accompaniment, are first-rate. No one is trying to make grand opera out of this; they\'re a true theatrical ensemble creating scenes, characters, and action. It isn\'t monumental, but it\'s certainly not "ephemera" either.

Phaedra, described as a "dramatic cantata" for mezzo-soprano and small orchestra, was written more than 30 years after Rescue. Besides being Britten\'s last
major composition for solo voice (a tribute to Janet Baker), it also is an example of his mature operatic vocal style. As it toys with atonality, the work remains anchored in tonal principles, even though the author occasionally moves, from the A major opening to the C major conclusion. Soprano Lorraine Hunt assumes a suitably mezzo quality for this work’s essential vocal demand, conveying the emotions of the distraught, suicidal Phaedra as she prepares to die, having been rejected in love by her stepson Hippolytus. Hunt leaves us no doubt about her emotional condition, and Britten’s music creates an ominous, fateful scene. It’s not exactly “pretty,” but it’s extraordinarily effective, an achievement especially admirable when you consider Britten’s own fragile physical condition in the summer of 1975, the year before his death. Although purists will want the London recording with Britten and Baker, this digitally recorded version with the very able Hunt, Nagano, and Hallé is a fine alternative, particularly when paired with Rescue.

—David Vernier

**GRAINGER**

**Works for Wind Orchestra**

Hill Song No. 2; Ye Hancocks O’ Bonnie Doon; Facese Island Dance; The Lad of Wemysh March; Irish Tune from County Derry; Shepherd’s Hey; The Merry King; Molly on the Shore; Country Gardens; Colonial Song; The “Gum Suckers” March; Lincshire Poys

Clark Randell, Timothy Reynolds, Royal Northern College of Music Wind Orchestra


Performance ***

Sonic *** 1/2

I t’s practically a breach of PC these days to call anything a “band” unless it’s in a football stadium, a holiday parade, or a circus. The concept of the symphonic wind ensemble, essentially a band reduced in size with minimal doubling on parts, and with a lean, clear sonority, was pioneered by Frederick Fennell at the Eastman School of Music in the 1950s and adopted widely by music schools and universities elsewhere.

This new volume of Chandos’ ongoing overview of Percy Grainger is devoted to works he wrote for what he called “the band.” Some of the works in this release were first recorded by Fennell and the Eastman Wind Ensemble for Mercury Living Presence. If these folks at Royal Northern want to call their band a Wind Orchestra, fine. It’s that, too.

Grainger, an Australian by birth and a one-time resident of the British Isles, ended up in the US, where he took up citizenship. In 1917 he enlisted in the Army, in which he served enthusiastically as a bandsman and instructor for the duration of the Great War. As a composer, Grainger was well suited for band writing, as he specialized almost entirely in miniatures—short pieces adapted from or in the style of folk material from Anglo-Saxon and Celtic traditions. In a way, Grainger is as important to commemorating those traditions as are Holst and Vaughan Williams. In his own way he rivals Bartók in having done so in a harmonic language that conveys a sense of loss and pain as industrialization marched in to blur and homogenize these traditions. Just listen to his 1951 arrangement of “Country Gardens,” based on his very first thoughts on the piece from 1908. Even in this most famili-

VICTORIA JORDANOVA

**Dance to Sleep**

Victoria Jordanova, harp, electronics, percussion, sampled sounds; Laura Carmichael, clarinet


Performance *****

Sonic **** 1/2

I think of the harp, and familiar sonic images fill the mind: the crystalline character of the Mozart Concerto, for example, or the lush sensuality of Ravel’s Introduction and Allegro.

But to hear Victoria Jordanova’s work is to shatter all musical illusions of the harp. The Yugoslavian-born baby-boomer, whose 1994 release Requiem for Bosnia was one of the most profoundly moving political works of this decade, has created a classically based sound as groundbreaking in its approach to the harp as Henry Cowell’s plucking and tapping inside the piano, or Diamanda Galas’ extensions of the vocal art.

Requiem for Bosnia was a haunting musical landscape sculpted from the sounds of a broken piano, electronically altered and unaltered harp, and a child’s voice. The works that filled that CD — the Four Preludes for Harp, Once Upon a Time, and Variations for Harp — carried on with a mixture of Jordanova’s singular instrumental voice, yet referenced them to the larger traditions of the harp, both classical and folk.

In the years between that CD and this, Jordanova’s approach to improvisation has grown more liquid and shamanistic, while her skill in mixing and balancing her sonic elements has taken sculptural relief and shape. Likewise, her work illustrates a unique lexicon of timbre, sonority, and color exploited to orchestral dimensions by a virtuosic visionary. On Dance to Sleep, Jordanova gives fuller range to her own personal explorations. Without the palpitating imagery of the ethnic fighting in her former country, she has managed to express profound sadness and dark uncertainty.

The featured work on the new CD is her six-movement Modules for Harp & Electronics, whose first movement, “Dance to Sleep,” is also the title track. The second movement, “Birds,” takes on a slightly funky character as Jordanova draws prehistoric cries from the windings of her bass strings and pricks, closely harmonized tones from the upper register. By contrast, the third movement, “In-Between” is a study in perspective akin to viewing a murder scene in slowly pulsing light through partially closed blinds. The throbbing music pops into sonic view unpredictably. “Paddleboat” takes on a timeless, floating character, its implied sense of rolling pulsation understated but palpable, like a rippled wave rolling under a thick canopy of trees throwing murky shadows. “The Saw,” with its high pitch bendings and warm, deep tones, is soothing, while “Static Jam” builds to a menacing crescendo like Phil Spector gone mad, only to abruptly drop out to the afterglow of harp.

The other major work on the CD — Mute Dance, for clarinet, harp, percussion, and sampled sounds — is inspired by and darkly evocative of the traditions of Jordanova’s homeland, the crossroads of Europe, Asia, and the Middle East. Over ominous drones and understated, asymmetrical backbeats, clarinetist Laura Carmichael delivers elongated, Middle Eastern–inspired lines.

Jordanova’s work is evocative throughout, yet is never brittle or jarring. Here is an expressive new voice who will forever change the sound of her instrument.

—Dan Buckley

Stereophile, November 1997
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Stereophile, November 1997
iar and jolly Grainger piece there are dark moments and reminders of mortality.

Chandos has made great strides in leaving well enough alone. Recent releases from this company contain very little to remind listeners of the excessive post-production of earlier recordings. The ensemble on this recording lives in a very believable space (identified as the Broadcasting House, Manchester). The space is broad and resonant, but individual lines and textures remain clear at all times, and at every level of density. The Royal Northerners play with a sense of motivation and accomplishment that appear to be thoroughly professional in every sense. The dance-tune performances are lively and spunky. The sustained pieces, such as "Irish Tune from County Derry (O Danny Boy)," are played with eloquent calm and not a hint of mawkish sentiment.

Volumes 1-3 of the series (Orchestral Works, Songs for Baritone, and Works for Chorus and Orchestra, respectively) are equally worthy of interest, especially to those seeking fresh and novel repertoire.

—Richard Schneider

LAMENTATIONS

Music of Palestrina, Victoria, Gesualdo, Tallis, Byrd, Kirby, Ramsey, Weelkes, Josquin, Tomkins, Allegri

Timothy Brown, The Choir of Clare College, Cambridge


Performance ****

Sonic ****

Sorrow is the theme of this beautifully put-together and performed CD. Opening with Palestrina's subdued setting of the Stabat Mater and moving through two settings of O vos Omnès, by Victoria and Gesualdo (the latter of which, with its amazingly weird chromaticism, is one of the reasons to own this CD), we get to a melody-rich Lamentations of Jeremiah by Tallis—a good place to take a break. William Byrd, George Kirby, and Robert Ramsey are represented by brief, potent pieces, and settings of "When David heard" by Weelkes and Tomkins offer nice comparisons. A deep, dark "Absalom fili mi" by Josquin, as well as his lament for Ockeghem with its sad ending of falling thirds, lead us to Allegri's widely recorded Missa, here sung very slowly and very handsomely.

The mixed Choir (there are four women) of Clare College is to be commended for avoiding that white-toned, arch approach to this music that most British groups seem to adore, and their pitch, sense of drama, and clean attacks are to be admired as well. The recording, from two different churches (tape a year apart), has fine ambiance and clarity. Included as a bonus is a video CD, playable (after some help from the tech-support people at my computer company) on my CD-ROM drive. It's very odd, with a jumpy, computer-generated look (rather than a filmed look, which I can only assume it has when played on a DVD player), and the sound is lousy. But it's great fun to play with, and Columns, a label new to me, doesn't charge for it. Video or not, this is a luminous program of devotional music, some of it not frequently recorded.

—Robert Levine

MAHLER

Symphony 9

Jesus López-Cobos, Cincinnati Symphony Orchestra


Performance ****1/2

Sonic ****


Three weeks ago, if I'd been asked whether any of those names seemed out of place among the others, I'd have had an immediate reply—and I don't need to tell you which it would have been. It's not that I had a low opinion of López-Cobos; I simply hadn't heard much of his work. Consider me convinced.

López-Cobos' reading of the Mahler Ninth stands tall among the very best, namely those listed above. I wouldn't even argue too strongly if you claimed that it is the best. But let's throw in the name of recording engineer Thomas Knab for some of the credit, too. Together, López-Cobos and Knab reveal details I've never heard before in this music.

López-Cobos gives us a highly articulated performance without sounding too careful or premeditated, the way Bernstein's reading with the New York Philharmonic often does. In slower sections, where many conductors founder, López-Cobos always finds some detail, some thread of melody or rhythm, to maintain momentum. And while others dwell on Mahler's preoccupation with death, López-Cobos finds room for the composer's joy of living. If the symphony contains the world, as Mahler wrote, López-Cobos seems to uncover a more complete world than most.

The Cincinnati orchestra's playing is beyond reproach, and seems to fuel itself on the energy of its conductor. The sound does ample justice to their efforts, with extremely realistic tone colors, superb natural detail, rich textures, and ravishing string sound. Although the notes make much of the Spatializer technology used in the recording, which is supposed to create a "surround-sound" effect from two channels, I heard no such effect—just an exemplary stereo soundstage.

This is simply the finest combination of music and sonics that I am aware of among recordings of Mahler's Ninth. And even without the extraordinary sound quality, the performance would be one to treasure.

—Robert Hesson

TCHAIKOVSKY

Symphonies 5 & 6

Symphony 5, excerpts from Eugene Onegin


Performance ****1/2

Sonic ****

Symphony 6, Suite 3


Performance ****

Sonic ****

Rudolf Kempe (1910-1976) is finally getting the attention he deserves in the reissue market. Perhaps because most of his best work at Covent Garden, Berlin, and Vienna came out on pre-stereo LPs that are low
Love and the Lionheart

Paul Hillier and Andrew Lawrence-King are certainly the ideal musicians to interpret the 13th century for us. Both have been performing medieval song for many years, and it shows in their beautifully assured and polished style. Hillier's solid baritone and direct approach to the material allow its essence to come through, while Lawrence-King (unquestionably the best harpist ever to record this repertoire) is an absolutely ideal accompanist. Even in the more complex works, such as “Ausis comme unicorn sui,” in which Love is described in the conventional language of feudalism, Hillier and Lawrence-King go straight to the heart of the matter.

Like many figures of history, Richard the Lion-Hearted has been subject to a good deal of revisionism of late. Not only have his military successes been questioned and his virtues buried under mountains of his faults, but he has even been “outed.” This difference of opinion is not unique to our age, however; Richard’s contemporaries had similar feelings. The troubadour Bertran de Born called him “Oe et Non” (“Yes and No”), while the anonymous author of “Rediet etas aurae” (performed beautifully here by Alla Francesca) praises his excellent government of England (the cash cow for his beloved Crusade). One thing is certainly to Richard’s credit: he loved music and musicians. Deconstruct however we will, we cannot deny the power of the mythology those musicians helped to create.

Alla Francesca has no revisionism in mind; its lovely CD might well have been produced by John Ford, who liked to “print the legend.” There are two sirventes (political satires) here, but one was written by Richard himself against his enemies, while the other does not mention him. The rest of the tunes are either love songs or works praising the Lionheart. Chief among the latter is the famous planh (lament) “Fortz chausa est,” written after Richard’s death by the troubadour Guaelm Faidit. As a celebration of the Crusader King’s patronage of the arts, these selections are a perfect choice. Perfect too is the “voice of mezzo Brigitte Lesnie, ideal for medieval music and sounding much like the descriptions we have of the jolars (professional minstrels) who originally performed these works. (There were also jolaresas, women who made their livings as musicians.)

It should be said, considering the number of medieval music recordings available today, that no one is absolutely certain how these songs were performed in period. There are some sketchy descriptions in manuscript sources, and some illuminations that show musicians and singers at work, but a great deal is still guesswork and intuition. Even so, these two discs represent vivid and involving realizations of the Middle Ages, speaking with a voice that is undeniably true to the spirit of those times.

Sound is fine on both of these CDs as well, especially on the Hillier Chansons, which is as transparent and natural as any I’ve heard. Instrumental tone is good to excellent on both, and soundstaging is realistic as well, although the HM suffers from a touch of the Skywalker Ranch problem: the side wall seems absent, and consequently the ambience does not spread as wide as possible. But this is definitely a quibble where audiophiles ought not to tread; pay it no mind.

—Les Berkley
Washington, D.C. He started piano lessons at age 5, and by the time he was 14 had been awarded a four-year scholarship to Oberlin College, where he graduated at the top of his class with a degree in piano and organ performance. From there he went to the Curtis Institute and studied with such notables as Rudolf Serkin, Mieczyslaw Horszowski, William Primrose, Gregor Piatiorgsky, and Rosario Scalero.

He was the first black Curtis graduate, and the first African-American to perform with the Philadelphia Orchestra. Walker taught over the years at Dalcroze School of Music, Smith College, and Rutgers University, where he chaired the department until his retirement in 1992.

The works included on the current collection — some newly recorded (1994–95), some from the CRI vaults (1983) — include works for solo piano, and 11 songs written from the 1940s to the 1960s. Walker himself is the pianist on all the works, with son Gregory playing violin in the sonata and soprano Phyllis Bryn-Julson performing the songs.

In all of the solo piano works, regardless of style, one is impressed by Walker’s broad, organic sense of formal architecture, fondness for dramatic contrast, and his rhythmic vitality and innovation — the latter likely rooted to no small degree in his knowledge of the organ litera-ture. He eschews coloristic devices and unusual sonorities in favor of a rich, traditional sound palette. There’s a Webern-esque compactness of form to his work, coupled with a very human expressivity. Even in works of marked atonality, Walker’s impulse connects with rather than distances his listener. As a performer as well, Walker comes off as authoritative, virtuosic, and soulful.

Many of the same qualities carry over to the Violin Sonata. The writing for violin alternates between songlike lyricism and jaunty expressivity. The interplay between the instruments is masterful, as is his contrasting at times of the piano’s massed sound against the more intimate violin. Gregory Walker is plainly a chip off the old block, delivering with great authority and presence throughout.

The songs are as outstanding as they are varied. Walker’s instincts for setting the English-language texts are impeccable. In “Sweet Let Me Go,” for example, the dark, tonally unresolved setting lends an unsettling undertone to a singer under sexual attack. In “The Bereaved Maid,” Walker generates a cycle of loss — from resignation and rage to disbelief and, finally, sad resignation.

In somewhat atonal settings of two Emily Dickinson poems (“What If I Say I Shall Not Wait” and “I Have No Life But This”) he offers the singer tough challenges, from half-spoken/slid bits reminiscent of Piotr Laine to large intervallic leaps and vocal extremes. In all, Phyllis Bryn-Julson proves up to the task, delivering with idiomatic style and dramatic impact.

You may not have heard of George Walker before, but after this disc, you’ll find yourself combing the record stores for more.

— Dan Buckley

GEORGE WALKER

The Music of George Walker

George Walker, piano; Gregory Walker, violin; Phyllis Bryn-Julson, soprano
Performance *****/2
Sonic *****/2

A n enthralling collection of music by the first African-American to win the Pulitzer Prize begs the question: “Why have we not known more about George Walker?”

A single-CD survey of selected songs and chamber worksspanning the years 1940–1970, The Music of George Walker demonstrates the composer’s stylistic versatility, depth, and innovation. Thoroughly rooted in the European classical tradition, his music unpredictably traverses Coplandesque landscapes, energetic and tonally ambiguous worlds, and finally outright atonality. In every language Walker pursues, however, there is a stamp of authority, individuality, and personality that makes his music compelling listening.

Walker, who won the Pulitzer Prize in 1996 for Lilas for Voice and Orchestra (commissioned by the Boston Symphony Orchestra), was born in 1922 in

Stereophile, November 1997
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Stereophile, November 1997
Leon Huff and Kenny Gamble: The men behind the music.

than Stax/Volt, the mainstream yin to George Clinton’s Mothership yang, the “Philly Sound” that Gamble and Huff masterminded was unabashedly cheesy, hugely tuneful, relentlessly upbeat, and, well… just great pop music.

Although they developed a gloriously overdone production style — multi-part vocal arrangements, lots of keyboards, and occasional tsunami of overdubbed violins — Gamble and Huff had range as writers. The duo wrote social-comment songs for the O’Jays like “Rich Get Richer,” “Don’t Call Me Brother,” and “Love Train,” the last of which also became their biggest hit thanks to a lush, irresistible arrangement, call-and-response vocals, and a big, bouncy bass line. With Billy Paul’s “Me and Mrs. Jones,” the team sailed over the moral dilemma of lyrics extolling an affair with a married woman by spinning out a long, sexy, slow-dance classic. And when it came to just plain selling records, Gamble and Huff could turn on the syrup and get sticky-sweet in numbers like the Three Degrees’ “When Will I See You Again” and the O’Jays’ “I Love Music.”

The most eloquent embodiment of Gamble and Huff’s artistic vision, however, was Teddy Pendergrass, then lead singer for Harold Melvin & the Blue Notes. “If You Don’t Know Me By Now” is probably the finest moment on record for both the singer and the producing duo. Pendergrass’ full-blooded vocals are also at the center of “The Love I Lost,” a tune whose Fender Rhodes intro and final extended refrain — “I lost it / Sorry I lost it” — are two of the all-time sweetest kernels of 70s excess.

Although anthologies like this inevitably leave a lot out, this three-disc set is a decent sampling of the Gamble/Huff legacy. The Blue Notes’ other hits, including “Wake Up Everybody,” are here, as are most of the great O’Jays singles, like “For the Love of Money” and “Back Stabbers,” and the huge hit “TSOP (The Sound of Philadelphia)” of the studio’s house band, MFSB (Mother, Father, Sister, Brother).

There are plenty of oddities as well. The O’Jays’ “Enjoy Yourself” was recorded for PIR. And then there are early singles with Wilson Pickett (“Don’t Let the Green Grass Fool You”), Dusty Springfield (“Silly, Silly Fool”), and the bizarre, Gamble and Huff–produced duo of Labelle and Laura Nyro (“The Bells”). Because Gamble and Huff considered their music to be more than just dance music (and because, as Producers, they actually knew what they were doing), these many-layered productions are surprisingly well recorded for their time, with vibrant high ends and big bass articulation.

While soul-music fans and children of the ’70s will be particularly susceptible to this set’s guilty pleasures, I suspect that Prodigy fans will find that the music hasn’t aged well. But for anyone who’s ever stood plastered against a cafeteria wall during a junior high dance desperately trying to screw up the courage to open themselves to certain rejection (me), or for players who looked forward to taking a crack at these gems (JA), or for anyone prone to air-instrument and imitative vocal binges (both of us), The Philly Sound is hard to resist.

— Robert Baird

**TOM RUSSELL**

The Long Way Around


Performance: ****

Sonic: ***1/2

Very few great songwriters have voices to match. Consequently, other people end up making hits of their work. But certain songwriters, Dylan being the obvious example, find ways to meld their careers as performer and songwriter until people begin to say, “No one does his (or her) songs better than he (or she) does.”

A hard-to-classify talent who doesn’t appear on a lot of musical radar screens, Tom Russell has quietly become his own songs’ best friend. Best known as a songwriter whose work has been recorded by Johnny Cash, Suzy Bogguss, Nanci Griffith, Joe Ely, and others, Russell is a Woody Guthrie–ite, a far westerner (dashes of “kai-otes” and “wide open spaces”), and a well-traveled song craftsman who is infinitely wiser and more memorably tuneful than 99% of the big-name singer/songwriters out there. Most of all, he’s a master of miniatures. In “Manzanar” (sung here with Katy Moffatt), for example, he details a Japanese-American family’s wounded pride when they’re forced into a WWII relocation camp. In the gorgeous opener, “St. Olaf’s Gate,” he paints what seems to be an autobiographical portrait of a chance rendezvous in Oslo, complete with black-market vodka, buskers playing “Waltzing Matilda,” and bagpipes squeezing out “old Claire de Lune.”

In one of his best tunes, “Haley’s Comet” (done here as a duet with Dave Alvin, who’s recorded the best-known version), he paints a sad portrait of rock’n’roll pioneer Bill Haley’s last days.

Instead of the standard greatest hits record, Russell’s decided with this disc to re-record a group of his best-known tunes, many in duets with the likes of Moffatt, Alvin, Jimmie Dale Gilmore, Nanci Griffith, and Iris DeMent. Nine of The Long Way Around’s 17 tunes were recorded live in St. Louis during a two-night stand and, as live recordings go, are nothing special sonically: Russell’s guitar and voice front and center, everything else drifting away on either side. The studio work is more evenly balanced and detailed.

On this set and also on his most recent all-studio disc, the excellent Rose of the San Joaquin (Hightone HCD 8066), Russell shows that he’s worked his Johnny Cash–like baritone into a good fit for his songs. As a sidelong, he’s also spread his wings and found success recently as producer of the much-acclaimed Tulare Dust tribute to Merle Haggard. Despite these forays, Russell’s songs will always be the reason to listen. That’s not to say that he’s immune to the usual songwriter pitfalls: some of his melodies and song structures sound too much the same. And well-worn subjects like the G.I.-turned-junkie who never came home from ‘Nam, covered here by “Veterans Day,” already have more than enough songs written about them.

But when Russell’s on, he’s one of a kind. From the descending chorus lines of “Outbound Plane” to lyrics like “Has anybody here seen the woman I love / She’ll fight down and dirty when push...
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WE'RE IN THE NEW YORK YELLOW PAGES

Stereophile, November 1997
Third Time's the Charm

In a year when Shawn Colvin and Jewel have been conspicuous exceptions to the rule, the road for most recorded singer/songwriters is still full of bumps and bruises, usually leading deep into obscurity. “Hey, ain’t that America…” But Dar Williams and Matraca Berg, two articulate storytellers who’ve turned their lives into songs with intimacy, poetic savvy, and fireside-chat charm, are determined to take paths less traveled. Williams and Berg have each just released their third and best CDs, and both are on career rolls.

New Englander Williams is a Wesleyan grad who recorded a couple of homemade tapes back in the early ’90s before stepping into the national spotlight. If the title of the second one, All My Heroes Are Dead, suggested a cynical, idealistic folkie at odds with her surroundings, the six years since its release have seen a graceful evolution for this ingenue who once aspired to playwriting. She’s toured and recorded with Joan Baez, appears on the new Heritage collection of newly interpreted American roots music (which also includes Willie Nelson, Mavis Staples, Jane Siberry, and others), and has sold well over 125,000 copies each of her first two, much-acclaimed CDs.

On End of the Summer, an album full of evocative songs that get even more interesting when you stroll through the lyric sheet, she’s gone electric and found a few heroes. “Are You Out There” is really a love song to the heroic late-night, small-station deejays who play cool, cutting-edge records and speak directly to listeners weary of generic songs and mainstream patter. Williams, who is 30, understands the passion of great radio and the compassion of those moved by it. Set to an infectious tune and a moody Daniel Lanois–like backdrop, “Are You Out There” blends the vision of a poet with the feistiness of a teenager just discovering herself and what’s really out there. On “Teenagers, Kick Our Butts,” the singer implores today’s youngsters to continually challenge the system, and with crafty foresight warns them to understand when, someday, another generation comes along to kick theirs. No wonder so many kids relate to her candor. On “What Do You Hear in These Sounds” she takes us right onto the therapist’s couch. (She’s admitted that her own experience with one probably saved her life.)

With electric songs interspersed with acoustic ones like the sweet “If I Wrote You,” dedicated to Townes Van Zandt, a seamless thread of reflection and optimism runs through End of the Summer. The set’s only non-original, the rootsy, album-closing cover of the Kinks’ “Better Things” (a minor hit from their Give the People What They Want album) finds the singer assuring a friend that the doubt and sadness of today will give way to a happier tomorrow. But in Williams’ clutches, the tender giddiness of Ray Davies’ original is replaced by a more guarded optimism. Things don’t always work out, as Williams knows, and it’s part of her considerable gift as a singer that she brings out the vulnerability in this song while remaining cautiously upbeat.

Born and bred in Nashville, Matraca Berg has become one of country music’s most respected songwriters, with the reputation of turning out finely crafted songs filled with hope, vision, and vulnerability. Some of the most evocative hits of the past couple years —“You Can Feel Bad,” “Cry on the Shoulder of the Road,” “Wild Angels,” “Everybody Knows,” “We Danced Anyway,” and “Strawberry Wine” — have come from her pen to light up the radio when sung by Patty Loveless, Martina McBride, Trisha Yearwood, and Deana Carter. With Sunday Morning to Saturday Night, Berg proves to be much more than a reliable songwriter — she’s one hell of a singer, on a par with Mary Chapin Carpenter, Pam Tillis, and Bonnie Raitt.

Like Dar Williams, Berg has a sharp eye for detail and a keen memory, and isn’t afraid to share her experiences. In “Some People Fall, Some People Fly,” she addresses her own marriage and concludes that, at the crossroads where the infatuation has worn down, some couples break up while some dig deeper. On “The Resurrection,” the album’s bold closer, Berg subtly weaves together the yearning for more innocent times with a requiem for the country singers of yesterday who’ve been forgotten in the gold rush of modern-day Music City. “Dreams die hard around here,” indeed. Berg remembers her town when its soil was still rough around the edges and when, as a child, she’d tag along with her singing mother and aunt when they’d do session work. She still hears that traditional sound in her head, and her songs continue to be rooted in it.

The bittersweet wonder and realization that proved “Strawberry Wine” a career-maker for Deana Carter is evident throughout Sunday Morning. In the bluesy “If I Were an Angel,” the singer recalls the sad taste of missing her mother terribly after leaving home for the first time, and in “Back When We Were Beautiful” she sings from the perspective of an elderly woman haunted by her aging reflection in the mirror.

But while Berg’s songs are always poignant, at its heart this is a fun, contemporary record whose songs probe the past in search of a meaningful future while not forgetting to live for the moment at hand. Produced by Emory Gordy, Jr. (Patty Loveless, Delbert McClinton, George Jones), Sunday Morning to Saturday Night is filled with the passion and real-life characters that populate her radio hits. Only this time, they’re coming straight from the force’s mouth.

—David Sokol

Above: Matraca Berg
Left: Dar Williams

DAR WILLIAMS: End of the Summer
Razor & Tie RT23062 (Cl). 1997. Steven Miller, prod. eng. AAJP: TT 43:52
Performance **** Sonics ****
MATRACA BERG: Sunday Morning to Saturday Night
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comes to shove / She'll win every round / If the fight goes according to plan / With the smile of an angel and the eyes of Roberto Duran" (from "The Eyes of Roberto Duran") to "U.S. Steel," a tune whose subject and approach owe much to Guthrie (and where Russell's vocal performance is unnervingly Cash-like), to border-town epics like the tale of a fighting cock, "Gallo del Cielo," Russell has built an impressive body of songs that, like Dylan's, may now have no better interpreter than their writer.

— Robert Baird

**JAZZ**

**ANDREW CYRILLE TRIO**

*Good to Go, With a Tribute to Bu*

Andrew Cyrille, drums; James Newton, flute; Lisle Atkinson, bass

Performance **** Sonics ****

**THE DEBUT RECORDS STORY**

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Performance **** Sonics ** 1/2

**G**ood to Go is a vividly recorded trio recital, each instrument delineated with power and precision, though a tad more perspective and ambience might have made things more involving for this finicky listener. Nevertheless, this close-up, ultra-live recording puts you right in the center of the action, with three master improvisers at the height of their powers demonstrating a highly disciplined, inventive brand of collective interplay.

For drummer Cyrille, an adventurous percussion virtuoso who has matched wits with everyone from Bill Barron and Mary Lou Williams to Cecil Taylor and Muhal Richard Abrams, *Good to Go* may very well be his most engaging recording as a leader. The varied and listener-friendly selection of vamps, swing, and ballads balances out the more visceral moments of emotional meltdown, as on the drummer's own "Fate," where the trio proceeds from some down-home fatback into a series of rhythmic transformations that manage to abstract the theme without totally losing its essence. Here, and on Newton's "Olmechas," Cyrille employs impeccable dynamics and touch to craft some marvelously resourceful melodic variations.

In Lisle Atkinson the drummer has a master bassist capable of the most resounding tonalities, focused low-end punctuation, and fleet, guitarlike passages—as on the cover of "Inch Worm," where a supple duet with Newton gives way to rollicking rhythmic exchanges with the drummer. And James Newton is the most accomplished, adventurous flutist in all of jazz. From his fluid, boppish elisions in "Inch Worm" and the rapid-fire cubist passages of Atkinson's "Hit It" to the Dolphy-esque blues cadences of "Oblong," Newton simply has more power, projection, tone, and rhythmic abandon than anyone else on the instrument. He moves easily from the funky lyricism of Andrew Hill's "Nicoledmus" to vocalized passages of Roland Kirk-like harmonics and multiphonics on Cyrille's rolling tribute to Art Blakey, manipulating his instrument like a macho tenor man or a wacky drummer.

Together, the trio swings in the most plastic, open-ended manner imaginable, treating free forms with more elegance and grace than they're usually accorded, for a spaced-out yet deeply rootsy recital.

— Chip Stern

**C**onflicts between artistic vision and commercial motivation are as old as the recording industry itself. Musicians balk at record-company edicts and start their own labels in order to command total creative control over their music. However, because they're such time-consuming and money-exhausting endeavors, home-spun labels rarely survive. While today's relatively inexpensive CD technology has made it possible for hundreds of jazz, rock, pop, and blues musicians to place "product" into the hands of fans, most leap at the chance to go broke with the majors if drafted.

The most successful artist-driven jazz record company for its time was Debut, founded by Charles Mingus and Max Roach in 1952. In its five-year existence Debut proved to be a launching pad for rising stars of the jazz world as well as a vehicle for established artists (including Mingus and Roach, both bandleading rookies then) to get their music heard. In the case of Miles Davis, the label provided an opportunity to pick up a few needed extra bucks on the side. With artistic integrity and genuine love of the music at the heart of the company, it's not surprising how top-notch the quality of performances are on the 4-CD retrospective Debut sampler released by Fantasy Records. Fantasy, the caretaker of several esteemed jazz imprints including Prestige and Riverside, gives snapshot views of Debut's catalog by compiling highlights, most of which have appeared on various Original Jazz Classic CDs or the 4-CD boxed set, *Charles Mingus: The Complete Debut Recordings* (12DCD-4402-2).

A word of warning about sonics: quality varies from scratchy, poorly mixed live material to surprisingly good studio performances (recorded, like so many during that era, in Rudy Van Gelder's home studio in New Jersey). Apologies are offered in the informative booklet. Reissuing obsolescence included damaged master tapes, missing masters (which required transfers from 78s, 45s, and LPs), and the rugged conditions of the original live recording sessions. But the compelling content is worth the distractions: This boxed set is packed with diamonds in the rough.

The proceedings begin on an auspicious note with several tracks featuring Charlie Parker recorded live at two New York venues. The playing is highly inspired (especially on a spirited rendition of Tadd Dameron's "Hot House"), but the sound quality is so muddy and the editing at times so sloppy that the music is almost unlistenable. But once you get through that stretch, it's fairly clear sailing. As might be expected, Mingus and Roach appear frequently, together in trios (including a superb three-tune sampler with pianist Bud Powell) as well as with their various ensembles. Mingus' work throughout is excellent, whether in duo settings (with pianists Billy Taylor and Spaulding Givens, aka Nadi Qamar), quartets, quintets, an octet, and, for a Thad Jones date, even a full orchestra.

The early highlight is the bebop summit of Dizzy Gillespie and Parker recorded at Massey Hall in Toronto in 1953. "Perdido" ends disc 1, and disc 2 opens with "Salt Peanuts" and "A Night in Tunisia." Rhythm section? How about Powell, Mingus, and Roach? The concert proved to be the last recording session of Diz and Bird together. The chemistry is strong, the feeling loose, the delivery delightful.

Other noteworthy performances include a four-trumpet group led by J.J. Johnson, trumpeter Kenny Dorham's
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Clifford Jordan, Junior Cook, Lou Orenstein, Willie Williams, tenor saxes; Charles Davis, John Jenkins, alto saxes; Robert Eldridge, baritone sax; Kiane Zawadi, trombone, euphonium; Benny Powell, mellophone; Dizzy Reece, Don Sickler, Deau Pratt, Joe Gardner, trumpet, Ronnie Mathews, piano; Ed Howard, bass; Tommy Campbell, drums


Performance ****

Sonics ****

Clifford Jordan, who died far too young in 1993 at age 62, was an unassailable giant of jazz. Both as a sideman (with J.J. Johnson, Charles Mingus, Horace Silver, and Max Roach) and as a leader, the Chicago native delivered consistently magnetic performances characterized by his resplendent, human-sounding tone and hard-swinging, extremely musical improvisations that were deliciously easy on the ear. Sadly, his refusal to be involved with anything but the highest musical standards limited rather than expanded his audience.

The big man’s fans were, and are, legion and lifelong. I’m one, and so is Mapleshade’s Pierre Sprey, who recorded the tenorist in several situations, including the splendid *Live at Ethel’s* (Mapleshade 56292). Here, Sprey captures Jordan with his rangy big band at Condon’s, a once-driving jazz room in upper Greenwich Village. In typical Mapleshade fashion, Sprey recorded the performance live to two-track analog with no board, using custom-made plexiglass panel mikes (the band called them “tomato catchers”). The setup conveys the wonderful aliveness and virility that you heard if you sat in front of Jordan and crew at this railroad car-shaped club. (I know—I was fortunate enough to hear the band there once.) It sounds great, with superb transparency and a humming soundstage.

For my tastes, there are nothing but excellent renditions here, mostly of Jordan originals. “Down Through the Years” is a gorgeous ballad that spotlights both Sickler’s heartfelt trumpet work and the leader’s idiosyncratic melodic flow and tonal warmth, with those incredibly rich low-register tones and crying middle-upper range. “Charlie Parker’s Last Supper” is another luscious slow tune that weaves between a sweet ballad and a down-home blues—a perfect platform for Jordan’s Bird-based exposition, and that of altoist John Jenkins, another Parker devotee. Jordan’s rhythmic whanuyn and mix of complexity and accessibility are showcased on the foot-stomping “Bearcat” and the medium-up rip-roarer “Third Avenue.” Among the standards are Monk’s “Evidence” and Dizzy Gillespie’s “I Wanted for You.”

If you want more of this band, check out *Down Through the Years* (Milestone 9197), also recorded by Sprey at Condon’s, but released with less ardent post-production values.

— Dan Ouellette

**JAMES BLOOD ULMER**

*Music Speaks Louder than Words*

James Blood Ulmer, guitar, vocals; Michael Mustafa Ulmer, keyboards; Calvin “Hassen Truth” Jones, acoustic bass; Amin Ali, electric bass; Rashied Ali, Aubrey Dapic, drums


Performance ****

Sonics ****

Even though he’s best known as a disciple of Ornette Coleman and his school of harmolodics, guitarist James Blood Ulmer has been experimenting with antimatter jazz since the late ‘60s, when he was cooking up his own brand of abstract funk with Hammond B3 organ ensembles. However, Ulmer readily acknowledges the Ornette factor, calling his music “harmolodic diatonic funk”—a country-meets-electric-blues-infused free interchange of movement that spurns the traditional lead/rhythm instrumental hierarchy.

Ulmer further celebrates Coleman with his latest album, *Music Speaks Louder than Words*, a rousing collection dominated by compositions written by the free-jazz maestro. (This album was originally released on the adventurous Japanese label DJW and scooped up for US audiences by Koch Jazz.)

Ulmer embalms his distinctive electric guitar voicings—searing riffs, blistering single-note runs, quaking chords, lots of tonal distortion—on each track. His ramble through “Lonely Woman” teems with impassioned intensity, and his launch into “Street News” brims with discordant beauty. “Cherry Cherry” rocks with a steamy cauldron of funk, and “Elizabeth” buoys with bluesy bounce. The intrepid Ulmer, once deemed the missing guitar link between Wes Montgomery and Jimi Hendrix, is typically brilliant throughout, performing sans cliché a balancing act between chaos and order.

Interspersed throughout the collection are three of Ulmer’s own funk tunes, pop-ish excursions that, instead of disrupting the harmolodic flow, actually succeed because they serve as palate-cleansing pauses. Ulmer adds a fine touch at the end, too, when he delivers “Rap Man,” a perky tune that, in its funky chorus, sounds like a cross between the *Batman* and *Ghostbusters* themes. Blood’s having lots of fun here.

— Dan Ouellette

*Stereophile*, November 1997

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Creek 4330R integrated amplifier

Editor:
I just hate it when I get a terrific review from that old dinosaur Sam Tellig. Does he still work for you? I thought he had died and was buried years ago. I do love it when he says bad things about my products or me. I get the opportunity to zig it right back at him (and boy, do I love to zig reviewers). But now he's gone and given the Creek 4330R a fabulous review. What can I say? Let me see...

First, there is no such thing as "wee hi-fi," "wee drama"; perhaps "wee boy," "wee mind," and, of course, "wee reviewer."

Second, I have no problem with the volume control. It works fine every time. Could it be his big fat hands that are causing the problem? If you want, I can ask Mike to design one with oversize buttons just for him.

Third, I'm glad his ears are still improving. Could it be all that exposure to Creek equipment that's done it, or is it all the free malt whisky he drinks at the shows? But whatever the reason, I'm glad he likes the Creek 4330R so much. It is a wonderful-sounding product.

I guess Sam is not dead—yet. Roy Hall

Musik Hall

Blaupunkt Las Vegas CDM147

Editor:
At Blaupunkt we were intrigued by the idea of Stereophile magazine reviewing our Las Vegas model car stereo CD receiver. It's very useful to have a product evaluation from a different, yet very informed, perspective. While the car-stereo press frequently reviews Blaupunkt products (usually quite favorably), we were eager to know what an audio magazine of the caliber of Stereophile would say about the Las Vegas to its typically very different type of audio consumer. (Let's see some hands: How many Stereophile readers went to a car stereo crank-it-up event last weekend? Anybody?)

It was therefore disappointing that the article seemed to focus on quibbles with minor points without commenting on its many sound-quality, performance, and convenience features. Beyond its excellent sound quality, the Las Vegas is easy to operate out of the box, yet also has some truly unique advanced features that should appeal to the audiophile in search of superior autosound. Unfortunately, by devoting a lot of space to a couple of seemingly minor distractions, your readers were denied any comment—good or bad—about many of the most significant aspects of the unit.

True, the scrolling point-of-purchase message should have been deactivated, and the retailer does this for 95% of the radios sold. In case they don't, the instruction manual also states in two prominent places that pressing the DIS button for eight seconds turns the message off. Permanently.

While the Thunder works in most applications, we advise dealers to offer it on a dealer-installed basis only to ensure that a line of sight exists between the transmitter and the receiver.

Considering the sophistication of your readers, we feel that they would also benefit from having your comments about other exceptional Las Vegas features, such as its low-impedance (200 ohm), high-voltage (3.0V) line outputs; advanced multipath management; superior FM and AM sound; and user-friendly CD-changer control capabilities, like Disc Select-By-Name. Also neglected was the unit's unique Direct Software Control (DCS) Menu, which accesses 16 features with just one button, including adjustable turn-on volume, mute level, and scan times, as well as Tuner Timer, a Blaupunkt-exclusive feature that works like a VCR timer, switching automatically to a desired radio station at a user-set time.

As the car had a simultaneous installation of a new amplifier and speakers, attributing the sound anomalies you perceived solely to the Las Vegas seems a bit unscientific. However, the excess sibilance and harshness you perceived may simply be attributed to the increased frequency response of CD. People become very accustomed to the sonic environment of their particular cars, and if they are not used to hearing CDs in the car, the full-range sound of the disc may initially seem bright or even harsh when compared with the limited high-frequency of other sources such as FM radio.

If a driver prefers to minimize the effects of the extra frequency response of the CD, we suggest first adjusting the treble, bass, and/or loudness settings for the CD source. As shown in the product literature and owner's manual, the Las Vegas bass, treble, and loudness settings are separate for each audio source (CD, Aux-In, FM, and even AM), and can be adjusted without affecting the settings for the other sources. I encourage you to take advantage of the Las Vegas' auxiliary input jack to evaluate the system with a good portable CD player, or drag an extension cord out to the driveway and hook up a good home CD player. Then, with the same CD playing on each source, you can directly compare the sound of the internal CD player, the CD changer, and the reference player.

At Blaupunkt, we welcome constructive criticism of our products when based on a reasonably thorough evaluation. In this case, we think a more comprehensive evaluation would provide your readers with a more complete impression of the Blaupunkt Las Vegas CDM147 receiver.

Jim Stevens
Product Manager, Blaupunkt

Audio Artistry Beethoven

Editor:
It gives me great pleasure to read Shannon Dickson's review of the Audio Artistry Beethoven loudspeaker. My goal was to design a speaker that communicates as much of the artistic performance and the soul of the music as possible, without intruding and adding its own signature and distortion to the reproduction. Apparently I have succeeded in some degree, since Mr. Dickson has enjoyed the experience of listening to a wide range of program material, full of dynamics and most subtle details. It has been my experience that it takes an open mind and some "reprogramming" to replace the sonic expectations that are based on our numerous exposures to box-type speakers, their generic forms of distortion, and their interaction with the listening environment. To me, live sounds in all their variation are always the reference, and I puzzle how we can usually recognize their presence. The Beethoven speaker has taught me a few lessons about what it takes to bring us close to the illusion of hearing something live.

John Atkinson states in his closing paragraph that "measuring large dipole speakers is always problematic, because the underlying assumptions about the measurement techniques and their relationship with the device under test are no longer completely valid." This is certainly true for the Beethoven speaker, where, for example, any nearfield measurement will not properly account for the canceling effect of the rear radiation from the
Exposure CD player

Editor: Music before hi-fi! Let's have music systems that make us laugh, dance, sigh, smile, cry (or just tear up—I am a big boy now). Escape isn't enough. Connect to the pain, the grace that's expressed through music. I'm convinced that the most valuable and ultimately fun systems somehow express what is most important musically in our recordings. That's where true value lies.

Thanks to Martin Collins for the kind words. Rest assured that Exposure will always put the demands of music and fun before hi-fi.

Mike Philks

Teffo

US distributor for Exposure Electronics

Transcendent T8 OTL power amplifier

Editor: Jonathan Scull's comments portray an exact picture of the sonic characteristics of my OTL amplifier. I am in full agreement with the recommendations made regarding speaker compatibility, gain, and so forth, and tell my customers the same things. There are a few Transcendent owners who use passive preamps. It is all a matter of speaker efficiency, room size, listening tastes, and signal source. For most installations, active preamps are the way to go. Two-ohm speakers are definitely out of the question and incompatible. It would have been interesting to see measurements done at 16 ohms just to demonstrate any performance differences as impedance rises. This is useful information for people who own electrostats and dynamics with high impedance characteristics.

The fit and finish of contemporary high-end equipment has risen to stratospheric levels. Matching that benchmark would easily push the T8s to well over $10,000. I have chosen to pursue a practical approach and stress functionality in a package that can be easily manufactured. The marketplace will determine if my choice was correct.

The amplifier definitely has an intentionally restricted high-frequency power bandwidth. I'm convinced that the most critical power range is below 1W, and most significantly below 100 milliwatts. This is where the subtle nuances are developed that distinguish one amplifier from another. The performance of the OTL has been optimized for maximum sonic accuracy without regard to measured performance. Extending the high-power bandwidth will cause the amp to sound brittle.

The minute DC fluctuations noticed are typical and mentioned in the owner's manual. They are caused by constant small variations in cathode emission and are insignificant.

The editor's question regarding class-A operation raises some interesting issues. The answer involves examining the fundamental differences between tubes and transistors. I am by no means an expert in solid-state amplifier design, but I do understand vacuum tubes and can comment on them with confidence. The following discussion relates to the series-connected output stage with complementary power supplies. The crossover notch in push-pull amplifiers that the editor refers to is, I believe, largely a solid-state phenomenon. The way a tube translates voltage into current (called a "transfer function") is completely different from a bipolar transistor. The tube does not shut off at the zero crossing of the output, but somewhere partially into the next cycle. This is called class-AB. For a portion of the cycle near the zero level, both tubes are in conduction again. Low-level signals always operate in class-A. This is evidenced by the test that showed my OTL had extremely low distortion at low power levels. If there were a spike from a notch, it would have shown up there. Perhaps a push-pull output transformer generates additional distortion products when the tubes transition from class-A to class-B, but you will have to ask a transformer guy about that one.

Bruce Rosenblit

Transcendent Sound

Sterephile, November 1997
ensuring that they were user-friendly, feature-laden, technically sophisticated, and flexible for use in all environments (including headphones and home theater). No more will audiophile consumers be faced with the dilemma of having to compromise their user habits in order to achieve some mythic sense of “purity.”

While it is unfortunate that “head-to-head” comparisons were not performed with more relevant competitive equipment (ie, other tube gear), it is nonetheless gratifying to know that, for example, the Power-1 can go “toe-to-toe” (with Class A-rated solid-state champs such as the Pass in areas where one would historically have thought a tube amp would be at a significant disadvantage. Nevertheless, this goes to show just how important advancing the technical art is in achieving the ultimate sonic potential of a product. These ain’t your grandpa’s Dynacos!

Again, we invite any and all interested audio consumers to compare for themselves — whether it is parts quality, build quality/craftsmanship, technical sophistication, features, ergonomics, warranty, price, value, or, most of all, musical satisfaction, we feel that both the Line-1 and Power-1 are without peers, especially in the tube electronics world.

Finally, I would like to take this opportunity to make the following comments about some particular points raised in the review. The second sample of the Line-1 was submitted for two main reasons — the software (which provides a large portion of the intelligent functionality of the unit) was updated, providing additional features that helped refine the ergonomics of the unit, and a “running electrical change” was incorporated that improved the unit’s signal-to-noise by as much as 6dB (which relates to Muse’s comments about the blacker silences).

With regard to Tom Norton’s technical measurements, I would like to point out that the vast majority of our users use the preamp in its balanced mode — thus, most all of the measurements (including S/N) would be substantially improved over what was offered in the review itself. (That’s how we spec them at the factory as well, on our Audio Precision System Two test center.) Moreover, I think it interesting to once again note that Tom confirmed Sonic Frontiers’ ability to lead the industry in the area of tube amplifier output regulation and conservation of power ratings — two factors that relate to our amp’s ability to work well into a surprisingly wide array of speaker loads and efficiencies.

To sum up, our thanks again to Muse for his extremely kind words on our Line-1 and Power-1. While these products do represent a new standard of sorts, given their price in relationship to the technology, features, and sonic quality provided, a substantial effort has been made by the designers at SFI to outdo themselves. In this vein, I am happy to report that both John Atkinson and Wes Phillips are currently engaged in the review of our Power-3 and Line-3 — each the culmination of over two years of product development effort by our talented design staff. We look forward to their commentary on these, the two reference products in the Sonic Frontiers amp and preamp product lineup.

Chris Johnson
President, Sonic Frontiers

Clearaudio & Souther
Editor:
We would like to thank both Stereophile and Michael Fremer for taking the time to review one of our many products. Unfortunately the dichotomy of this review leaves me both amazed and bewildered, as do Mr. Fremer’s approach, reasoning, and conclusions.

Mr. Fremer is correct that records are indeed cut on a lathe in a straight line across the grooves, and are best played back via linear-tracking arms. He is quite wrong in his assumption that linear arms create “a plethora of problems” as opposed to pivoted arms. First and foremost, all linear arms will deliver proper left-right channel balance across the entire record, as opposed to a pivoted arm’s two null points on the same record. His argument about

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“vertical and horizontal” masses does not hold water. Nor does the one about placing the “pivot inches behind the stylius’ travel across the record.” This position allows the cartridge/cantilever more freedom in traversing warps without any “audible warp/zoom,” as opposed to pivoted arms, whose lengths place tremendous forces on the cantilever/cartidge combo when encountering warps, causing compression of the stylius, and thereby creating a very audible “wow/flutter” problem. His assumption that only linear arms change VTA when traversing warps, and not pivoted arms, is also false. Take the least. Also Mr. Fremer alludes to the strength of rigidmount pivoted arms as opposed to linear. This is all well and good, except the pivoted arms he refers to are all unipivot designs—hardly very rigid.

With regards to Mr. Fremer’s comments, he indeed did have the benefit of the importer coming to his home for set-up, and this proved fruitless. In spite of our trying to show Mr. Fremer the correct set-up (as he wanted to make many cartridge swaps, etc.), upon our return to install the isolation platform, my associate found the tonearm to have been set up at least 0.5° off-center from the spindle. In this position Mr. Fremer could never have gotten overhang correct, nor would the cartridge have tracked very well. It’s one thing when a consumer has a problem and calls, but quite ludicrous when a reviewer has one and doesn’t. Mr. Fremer’s setup problems were probably overstated in his review, partly due to his fondness for idiot-proof setup arms such as the Graham or VPI, lack of understanding of the Clearaudio/Souther TQ-1, or perhaps because of his own inexperience.

As an example, I was amazed at the amount of words expended on this tonearm, even after it had received a Class A rating in “Recommended Components,” and with the knowledge that Mr. Fremer’s co-reviewer, Stephen Stone, uses and has used this arm as his reference for the past seven years. Surely a telephone call to Mr. Stone would have helped him through any angst with the arm.

As concerns Mr. Fremer’s remarks concerning “the big picture,” he was right on, and this is a general consensus among reviewers and the public alike. As for the surface noise he heard, this, as well as the brightness, could have been corrected by a VTA adjustment. Also, had Mr. Fremer bothered to read the cartridge literature, or just called me, he would have been informed that the 2.2gm tracking force was a preferred one set by the factory, but that the user could and should experiment with tracking forces from 1.8 to 2.8gms for the optimal VTF.

Again let me thank Stereophile and congratulate Mr. Fremer, for I had no idea he held degrees in both Physics and Mechanical Engineering, though we all knew he held a Master’s Degree as the “Analog Maven.”

Joseph De Phillips Discovery Cable

Golden Sound DH cones & squares
Editor:
I would like to thank Mr. Jonathan Scull for his excellent review of Golden Sound DH Cones and Squares. Mr. Scull found the Golden Sound products compared well with another isolation device that costs seven times more. This reconfirms our philosophy of designing value products for budget-conscious audiophiles. Golden Sound DH cones and squares can work with top-of-the-line electronics as well as budget ones. In addition, Golden Sound products have found their way into renowned European recording studios. Placing Golden Sound DH cones under your equipment or speakers takes less than a few seconds, and you do not need to do an A/B test to hear the difference. The effects of DH cones and squares are cumulative: when you place them under all components of the system, you will enjoy a stunning musical experience.

Thank you again, Stereophile and Jonathan Scull, for the honest review.

Allen Chang President, Golden Sound

NHT 2.51 loudspeaker
Editor:
Many thanks for the review of NHT’s 2.51 loudspeaker (October ‘97, p.209). We’re gratified Lonnie Brownell had a good time with the product and understood the design goals intended. By the way, Lonnie, there are a lot of us who have been trying to stump Ken Kantor with “name that tune” for years, only to be continuously frustrated. Next time, try disco.

While I’m at it, I’d like to take the opportunity to thank Wes Phillips for the time he spent with us here at NHT in preparation of his interview with Ken (October ’97, p.88). We had a great time. One sad note, however: While we hoped that allowing Ken time to make his CD would keep him sane, it was not to be. Chris Byrne
General Manager, NHT

Classé CAP-100 & REL
Editor:
We would like to make a correction to a reference made by Robert Harley in his report on the Classé CAP-100 integrated amplifier in the September 1997 issue. On p.133, in his “System Context” sidebar, Mr. Harley states that the REL Strata II can be connected to the output of the Classé, thereby powering the REL with the amplifier in the Classé and bypassing the internal amplifier in the subwoofer. This is a misinterpretation of the REL’s system integration. The preferred method of connecting the REL to a sound system is indeed via the outputs of the main amplifi-
We continue in that review by stating that, "Compared to my reference, the Transfiguration Temper—a cartridge that costs 50% more—the Frog lacked an extremely small amount of airy liquidity. However, to another listener that liquidity could sound like an undesirable softening of detail." That other listener, your esteemed writer Michael Fremer, in his review of the Transfiguration Temper in July 1996, stated, "just the right balance of snap and grit and smooth shimmer to high-frequency transients...vocal sibilants, which were never smothered or smoothed over; neither did they sound sharp or mechanical. They just sounded real."..."the Temper was able to keep going "up" after the transient without getting lost in a high-frequency haze. It presented the snap of real instruments without adding an artificial-sounding electronic edge."

Regarding the cost issue, while the Transfiguration Temper's suggested retail is indeed 50% higher than the review cartridge, this does not take into consideration the trade-in program pioneered by Musical Surroundings and offered with both Benz and Immutable Music phono cartridges. As I have informed your readership since 1992, this program allows music lovers to cost-effectively upgrade their phono cartridges by trading them in for superior, modern-day moving-coil cartridges. The trade-in for other-brand cartridges toward the Temper is $100, netting the end-user cost to $2800, and we provide a $1300 trade-in allowance for other Immutable Music cartridges and Benz models. It is our long-time association with the Benz factory in Switzerland and their ability to rebuild moving-coil cartridges that provides us this advantage. In fact, more music lovers are taking advantage of the Benz factory rebuilds on the famous cartridges of yesterday, including Koetsu and Spectral.

Garth B. Lever
President, Musical Surroundings

MIT at HI-FI '97 #1
Editor:
Reading Martin Colloms’ comments about the HI-FI '97 display of MIT’s new OP Squared system (the Bay Area Audio room, featuring Classé, Thiel, MIT, and ASC; September '97, p.91) made me wonder whether Martin and I were talking together in the same room at the same time.

When Martin came into the display room, I explained that I would be happy to give him a general description of how the OP Squared concept worked, but that I don’t pretend to be an engineer, and that if he needed more engineering-oriented data, then one of our engineers (two were present in the room at the time) could follow up.

After I gave him a brief overview, his first statement was something like, "This is just bridging the amplifiers using external means." I explained that the Classe amps already have a Stereo/Mono switch, and hence didn’t need our product for bridging, but that there are other reasons for using the OP Squared system. I explained to Martin that in the OP Squared system, you do not use the Mono switch, but leave the amp in the Stereo mode. You do use the left and right balanced inputs, but not in the manner the amplifier manufacturer originally intended. I was quite specific about this. I did not say that the cable doubles the current, but rather that the cable changes the operating system of the amp to get the optimum power out of each amplifier.

I went a bit further, and related our experience about the "proof of the pudding" demos that we had done in dealer show-rooms, where we did an A/B/A test using two CA-400 amps, first in bridged mono mode, connected to the speakers with our (much more expensive) MH-850 Speaker Cable, then after flipping the amp’s toggle back to Stereo switching over to the dedicated OP Squared cables. Engineering hoo-hah aside (and I’m sure MIT’s engineers will have something to say about this), this empirical demo has never failed to turn skeptics into believers. Perhaps we should do this sort of comparison for Stereophile magazine’s reviewers, even though it might have the aura of a dog’n’pony show.

Next, Martin asked why there were so many network boxes on the speaker cables. I explained that the OP Squared system converts the negative-phase output into a driven "inverted positive," which means that we treat it as an active leg and apply MIT’s network technologies, resulting in the apparent redundancy of boxes.

Based on Martin’s comments, I can only speculate that what he ended up saying in print is exactly what he’d predetermined prior to entering the room, which is that many cable companies (including MIT) are selling "20" of packaged copper strands and plastic" at wholly unreasonable prices. Martin’s attempt to lump MIT in with those cable companies that claim supernatural results from attaching fancy connectors to out-of-the-catalog OEM wire should be recognized as a cheap shot. Martin completely ignores the quality and cost of skilled labor, engineering effort, and parts that go into every MIT product, and which rival those same aspects in amplifiers and other components. Because MIT is an engineering-oriented company where test and measurement are as important as listening in product design and development, we don’t make claims without having the scientific data to back them up. That information was available to Martin (and still is), as it is to any responsible journalist.

Please note that this is not the first...
time Martin Colloms has brought inaccurate information about MIT to your pages. In his review of the Wilson X-I Grand SLAMM (Vol.17 No.12), he inaccurately credits Transparent cables as being used in the development of Wilson Speakers, when in fact, up to that time, it was MIT that was used in both engineering and in the supplied “Tails.” At the same time, he thought might have been an innocent mistake.

What can we conclude here? It is clear, by the nature of his comments, that Martin did not understand what sets the OP Squared system apart from conventional cables and bridged-amplifier configurations. If my explanations (and the wall graphics in the room illustrating the principles of OP Squared) were confusing or didn't add up to “engineering reason,” why didn’t Martin accept my offer to bring one of MIT’s engineers into the conversation? Perhaps if he hadn’t been so ready to add us to his rogue’s gallery of “cable companies…promoting their products beyond engineering reason,” he might have gained a clearer concept of what he was seeing, and have written about MIT’s OP Squared system as an innovative new way of upgrading an already good stereo system.

Joe Abrams  
Senior Salesperson  
Music Interface Technologies

MIT at HI-FI ’97 #2

Editor:
In his HI-FI ’97 Show Report (September ’97, p.91), Martin Colloms mentioned the MIT display in the Bay Area Audio room. Mr. Colloms stated his opinion that the MIT OP Squared system is simply a “cable set arranged to bridge suitable amplifiers” and that such an arrangement is “ancient history.” Mr. Colloms also asked questions about the amount of power available from such an arrangement, and implied that MIT was among many cable companies that promote their products “beyond engineering reason.” We at MIT believe that our OP Squared system delivers significant improvements in overall sound quality compared to conventional forms of bridging used with many amplifiers. Here’s why:

1) The OP Squared system architecture offers easy installation and use, letting audiophiles achieve optimal, fully balanced bridge-mode operation from preamp through to the speaker, without the need to modify either amplifiers or cables — modifications which conventional arrangements can require — because the OP Squared system uses two stereo amplifiers each configured in its normal stereo operating mode. The OP Squared system’s unique balanced interconnecting cables (preamp-to-power-amp connections) automatically provide the correct signal polarities to the amplifier inputs while maintaining excellent shielding and signal balance.

2) The OP Squared system provides fully balanced operation for better signal symmetry and common-mode rejection. Often, putting a stereo amplifier into bridged mono mode inserts an internal phase inversion stage into the signal paths in the two channels of the amplifier, leading to poorer soundstaging and imaging qualities as well as greater noise and distortion. In the OP Squared system, and with the amplifiers it is designed to work with, no extra stage of phase inversion is used because the amplifiers are operated in normal stereo mode and the two channels are highly symmetrical in operation.

3) Most important, the OP Squared system employs MIT’s patented network technologies, called Opposite Phase Terminators, on both phases of the balanced signal cabling all the way from the preamp through to the loudspeaker. It is true that fully balanced operation offers an improvement in sound quality over ordinary unbalanced stereo operation, thanks to lifting the speaker off of the system ground and to the increased current control that the bridged channels exert over the speaker. However, we believe that it is MIT's exclusive Opposite Phase Terminator technology that makes possible the dramatic improvements in sound quality that our customers report to us. Their subjective experiences correlate well both with our objective measurements and our own subjective listening experiences.

Listeners report that the MIT OP Squared system produces large, deep, and life-like soundstaging, enhances precise imaging, lowers noise, and greatly increases detail, resolution, and transparency.

We emphatically do not undervalue the importance of the quality of the electronic components used with the OP Squared system. Mr. Colloms is right that it is the amplifiers, not the cables, that make the increases in voltage swing, current delivery, and power possible. No passive component can increase the amount of power delivered beyond that available from the amplifier. MIT’s exclusive network technologies and the balanced system architecture that the OP Squared system provides, however, can and do improve the quality of the signal power ultimately delivered to the speaker.

There is no question that a stereo power amplifier has to be well designed in order to deliver the maximum power theoretically possible from bridged differential operation. Just to review, bridging effectively doubles the peak-to-peak signal voltage output of the amplifier. This in turn doubles the current delivered to the load. Since power = voltage x current, doubling each quantity ideally results in four times as much power delivered to the speaker. We actually named the OP Squared systems in reference to the elemental fact that output power is proportional to the square of the signal voltage (P = E^2/R) and to the square of the signal current (P = I^2 x R). Of course, each channel of the bridged stereo amplifier contributes half of the total power, so each channel sees its power delivery double.

Naturally, amplifiers can have significant problems delivering the doubled output current and handling the resulting doubled internal power (heat) dissipation in each channel. However, even if the amplifier cannot deliver the theoretical four-times increase at maximum output due to internal losses proportional to current flow, it can deliver the four-times increase for signals only a few dB below maximum. We believe that this is the reason that the typical subjective experience of the MIT OP Squared system related to us by listeners is one of a sense of an enormous increase in system power, with a correspondingly enhanced sense of effortless musicality. The OP Squared system’s inherent synergy — the increase in system power delivery, the increased current control over the loudspeaker, the lowered noise floor, and the impact of the Opposite Phase Terminator circuitry — results in the OP Squared system’s revelation of rich harmonic detail and accurate microdynamics.

It would be too bad if Mr. Colloms' negative opinions about cable companies lead Stereophile readers to dismiss the MIT OP Squared system out-of-hand as just "packaged copper strands and plastic." We sincerely hope that audiophiles will remain open-minded enough to consider MIT's products and to experience for themselves the performance benefits that MIT's OP Squared system can deliver in their systems.

As an engineer and a member of the MIT design team, I take Mr. Colloms' charges seriously. The simple courtesy of a contact or call for more information by Mr. Colloms could have prevented misstatements that many will consider damaging and inflammatory. The charges Mr. Colloms makes are serious, and I don't think that squeezing them into a "show report" is the proper way to raise them. They deserve serious editorial consideration about quality, performance, and value. We at MIT welcome serious reflection on these important issues.

Tim Brison  
Chief Engineer, Music Interface Technologies

1 Mr. Brison's argument is true provided the amplifier is not used near its current limit (as he states in the next paragraph). With a bridged pair of amplifier channels, that remains the current limit of just one channel. In effect, when a two-channel amplifier is used in bridged mode, its rated impedance capability is doubled; if it will comfortably drive 4 ohms in two-channel mode, it will enjoy the same level of output power comfort driving 8 ohms in bridged mode. —JA
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C

ventional wisdom in the jour-
nalism business is “never apolo-
gize, never explain.” Neverthe-
less, I must apologize. September’s
“Final Word” caused hurt to a fellow
journalist, which I never intended.

In September, I criticized Stereo Review’s
Ken Pohlmann for writing that his music
purchases would be suspended until
music media became more technically
advanced—higher sampling rates, more
bits, more channels. Whenever I’m dis-
cussed in other magazines —such com-
mentary is always negative — I always feel
it’s an upper. “At least they noticed—at
least I exist,” say I to myself. Ken appar-
ently didn’t appreciate my notice, so I’m
here to say I’m sorry to have called him on
the carpet with so little charity.

Besides, it might distract from this
month’s column, when I have some-
thing to really be against: DIVX. You
probably haven’t heard of DIVX; if
we’re lucky, this column will be the
only place you’ll have to confront it.

As you can read in this issue’s
“Industry Update,” DIVX is an alterna-
tive form of DVD being promoted by
Circuit City, the country’s largest elec-
tronics retailer. You don’t need an alter-
native to DVD? Neither do I, and I
absolutely don’t want one. DIVX is a
system combining the disadvantages of
software rental (limited plays) with the
disadvantages of software purchase
(higher price) with the disadvantages of
a new entertainment medium (regular
DVD players won’t play DIVX; you
need a different one that costs $100
more) with the disadvantages of DSS
(you have to be hooked up by a modem
for it to work) with the extreme disad-
vantages of confusing the marketplace.
I feverishly wish it an early demise.

The inventors of DIVX are trying to
confront the reality that DVD is a self-
thought form of movies-on-video,
rather than the traditional rental-first/ 
purchase-later pattern that has charac-
terized videotape. What about Joe or
Josephine Sixpack, who just want to
watch a movie once or twice?

With DIVX, Joe and Josephine get to
buy a limited-use DVD for $5, play it as
often as they can within a 48-hour peri-
don, then put it on their shelf for the next
year or two, at which time they can put
it in their DIVX player and watch it
again for an additional fee. (Their DIVX
player is hooked up by modem to DIVX
Central, which grants permission to
their player to run the film again.)

Alternatively, J and J can at any time
“buy” the disc they’ve already bought,
turning over an additional $20 to their
DIVX masters for unlimited plays. My
guess is that they can’t play it on their
neighbor’s machine, whether it’s DVD
or DIVX.

You don’t need an
alternative to DVD?
Neither do I.

And what about the situation they
face if, miraculously, DIVX is out of
business and their modem gets a “dis-
connected or no longer in service” mes-
sage when it calls? In a just world, all
their discs would be automatically
playable forever. I haven’t seen DIVX
address this problem —no need to talk
of going out of business when they’re
just starting up—but my guess is that
Joe and Josephine will end up with a
shelf full of unusable discs.

DIVX is the work of a new company
called Digital Video Express, two-thirds
owned by Circuit City and one-third by
the law firm that came up with the idea.
I can see a law firm making a consumer-
electronics blunder like this, but what’s
Circuit City’s excuse? Could it be greed?

Circuit City already sells more brand-
name consumer electronics products than
anyone else. But some product is still sold
by others. With DIVX, CC gets a cut
from any DIVX player sold by anyone,
and a cut of every DIVX software sale (or
rental—which is it?). The movie com-
panies that have announced support for
DIVX—Disney, DreamWorks, Para-
mount, and Universal—have been
rumored to be getting royalty guarantees
up front of $30 million per studio, accord-
ing to industry newsletter Audio Week.

So there’s plenty of greed to go
around. Who could have doubted it?
And software companies are apparently
attracted by the more effective copy pro-
tection incorporated in DIVX. I can
readily imagine Disney, fearing for
the theatrical-release integrity of their
world-popular animation features, em-
bracing the additional protection offered
by DIVX. But, according to Audio Week
again, most DIVX supporters are plan-
ning simultaneous DVD and DIVX
releases—so what use is the additional
copy protection?

Industry reaction has mostly been
negative, other than hardware compa-
nies for whom Circuit City is the big-
gest customer. Warner’s president said
DIVX supporters “have shot themselves
in the foot.” Tower Records’ Russ
Solomon called DIVX a “dumb” idea.
“Let’s hope it’s bad enough that Circuit
City will lose its ass.” Other retailers
expressed varying amounts of dismay,
mostly about sending profit to Circuit
and the fear of confusing consumers.

That’s my concern. If DIVX doesn’t
confuse the marketplace, where’s the
harm? It could turn out to be just anoth-
er batch of DVD players out there to
prod studios into releasing more movies
on regular DVD, which I’m all in favor
of. And I don’t care if Circuit makes a
few extra dollars.

But nothing is clearer historically than
the consumer’s distaste for alternate and
incompatible versions of the same thing.
Videotape survived the Beta/VHS bat-
tle, but the format’s acceptance was
slowed by the conflict. Four-channel
sound in the ’70s was plagued not by
technical problems but also by differ-
ent systems of delivering the same thing.
MD and DCC, the media that no one
wanted or needed, thankfully came out
at the same time, thus ensuring their
mutual failure (though Sony continues
to flog MD in this country now that it’s
succeeded back home).

And DVD already took a dual-format
hit back when the Sony/Philips version
did battle with the Toshiba/Warner
version. That cost the format at least a
year in release timing, for which the
consumer-electronics market as a whole
has been paying for the last year and
a half.

Is “Will they never learn?” too trite a
query to pose as DIVX tries to get start-
ed? Make DIVX a useful add-on down
the road, like HDCD. Let the market
decide—once there actually is a DVD
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