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ROBERT HARLEY ON PARASOUND DIGITAL

RICK ROSEN VISITS PHILIP GLASS
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As We See It

"The Right Thing To Do"

"There are two kinds of fools. One says, ‘This is old and therefore good.’ The other says, ‘This is new and therefore better.’" — Bob Katz

I've been lurking on some of the Internet newsgroups recently. It's an interesting experience: If you want to experience audio life as it might be if Stereophile did not exist, you should subscribe to recaudio.high-end. Despite the newsgroup's title, some of its most vocal denizens seem to have both little interest in high-end audio and much faith in their own belief systems. If I were as sure about one thing as these cyberspace cowboys appear to be about everything, my life would be much tidier. It would also be a lot less rich.

Take digital. If you hang out on r.a.he much, you'll read ad nauseam that 16-bit digital is good enough for everyone and that anyone who dares say otherwise, or who—Saints Nyquist and Shannon forbid—prefers analog, is suffering from delusions. "Put it to a double-blind ABX test!" goes up the cry whenever some newbie dares to criticize the sound of CDs and ascribe it to anything other than poor microphones, a poor recording venue, or a hamfisted engineer.

One poster, Siegfried Duraybito, has been flamed so many times his epidermis must be done to a crisp (or else he spreads his screen with 45-strength sunblock). Yet I continue to be surprised by my experiences with digital: Either I hear what I don't expect, or I don't hear what I do expect.

Let me tell you two tales:

• I recently uploaded all seven hours of the 20-bit, 4-channel Nagra session tapes for Stereophile's forthcoming Robert Silverman Liszt CD1 into our Sonic Solutions hard-disk system. (I wanted to start work on the editing during what passes for my leisure time.) I started listening to Liebestraum. Major disappointment. I had remembered the piano as sounding almost luminous: richly reverberant yet subtly detailed. But the recording was more "clangy" than I remembered; the piano sounded smaller, the acoustic drier, the reverberation tails less lusciously long. Had I misremembered? Were my expectations too high? I powered down the system, had a cognac, went to bed, and slept fitfully.

Around 4am I sat bolt upright in bed, went straight to the listening room, and checked the Sonic Solutions audio input/output parameter settings. Input word length was set to 20 bits; output word length was set to...16 bits. I was inadvertently chopping off the four LSBs of my beautiful data! I reset the output word length—that was more like it. Without the truncation, the piano sounded like the 9' New York Steinway it was, and not like some fiberboard knockoff. And the reverberation? Even the sound of my voice on the cue speaker could be heard to light up the church acoustic in a most realistic way.

Wes Phillips came over to do some A/B tests. He heard what I heard—and this was against a background of computer-fan and hard-disk noise. So the next time someone tells you 16-bit digital is good enough, ask them what color the sky is in their world. Or at least ask whether they've actually done any comparisons like this to make them so sure of their philosophical ground.

• At the recent Winter CES, I made sure to visit recording engineer and erstwhile specialty audio retailer Peter McGrath. Peter was demonstrating the excellent EgglestonWorks Andra speakers with Levinson electronics and, among other sources, a Nagra master tape of pianist Valentina Lisztya performing virtuoso arrangements by Liszt and Godowsky (Audion CD 7205). The sound was to die for. Luminous. Powerful. Like a real piano. I then heard a CD-R cut from the Nagra tape, noise-shaped down to 16-bit data using the Meridian 518. Close, very close. Then Peter played a test pressing whose CD glass master had apparently been cut from a double-speed CD-R.

My jaw dropped. While still offering a good piano sound in absolute terms, the CD sounded more clangy, the reverberation tails less lusciously long. The pressing plant had assured PM that the data were identical, yet the quality difference was so large that Peter and his associate could identify it 10 times out of 10 in a blind test.

Peter asked me to take both discs home from the CES and do a bit-for-bit comparison on the Sonic Solutions. To my surprise, the data were identical. Unlike my experience with the first mastering of Stereophile's Concert CD, when a careless transfer had changed the data (see February '95, p.3), the Lisztya CD pressing was identical to the CD-R made directly from the master tape. Yet compared, say, with the differences between two good solid-state amplifiers, the sonic difference between the two discs was enormous. It could only be due to differing levels of word-clock jitter cut right into the disc. If I find that idea alarming—I had always assumed that all data-storage media act as brick walls to upstream jitter—how will the more obtusest inhabitants of r.a.he react to it?

I offer this story to accompany Bob Katz's and Michael Fremer's discussions in this issue on the perils of mastering CDs from jittery double-speed transfer media. As Bob mentions in his letter, Sony Classical's David Smith has developed a system in which a CD's worth of data can be clocked out of RAM to feed the glass-master cutting system. This seems a brute-force way to solve the problem, but if that's what it takes, it must be the right thing to do.

But only if you accept that not all is known regarding digital technology. If you insist that everything is already good enough, then how can it be made better? And "better" is what we're asking for.

—John Atkinson

1 Due for release at Hi-Fi '96, to be held at Manhattan's Waldorf-Astoria Hotel, May 31 through June 2, where Robert Silverman will be performing live.

Stereophile, April 1996
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Stereophile, April 1996
SINGLE-ENDED CLASS A

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- CAL. AUBURN: MODERN SMART - BAKERSFIELD AUDIO
- BAKERSFIELD: CEDAR JAZZ - MESA AUDIO HAVER - NUICEO CHOICE OF DAVE COSTA
- COSTA: MESA: ATLANTIC STEREO - FRESNO SOUND ADVICE - NOLIUSER FORTIMO HIQ SATCON AV - LOS ANGELES V ORLANDO - LA VINO PARK - CHICO
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- The Inner Ear Report on the Esprit/BP

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- Audio Ideas Guide on the Eclipse/BP

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CONGRATULATIONS!

Editor:
I previously wrote you wondering why stringed instruments are so poorly served by recordings. Stereophile's Festival CD is the best recording—not just of strings—I've heard, and that includes several HDCD discs. I have a Wadia transport, an EAD DRP-7000 Series 3 (with HDCD chip), Spectral preamp and power amp, and Snell Model Ci speakers. For the first time, strings really sounded like strings. You could tell the cellos from the bass, and more of the true richness, not vague opaque rumblings, was present.

After hearing Robert Shaw conduct Elijah about two weeks ago, I bought the Telarc recording, which is also outstanding. Comparing the live sound in the hall with the CD, I was impressed by the accuracy the Telarc engineers got with their 20-bit system. Still, Festival has a great deal more transparency without sacrificing any of the richness of the instruments. Congratulations.

Paul Kwilecki
Bainbridge, GA
Pk1313@aol.com

FESTIVAL!

Editor:
At last, a Stereophile release I can recommend to my picky musical friends! Apart from the middle piece—Tomiko Kohjiba's Transmigration of the Soul—which I found to be a smashing bore, the performances are elegant and the recording hard to fault. (I'm trying, I'm trying!) Certainly, there was nothing the matter with the performances on the previous Stereophile discs, it's just that they underscored the differences between competence and virtuosity.

My congrats to all those who contributed. I couldn't have done it better.

J. Gordon Holt
Boulder, CO

Thank you, Gordon, and thank you, Mr. Kwilecki. The other works on Festival are Copland's Appalachian Spring and Milhaud's La création du monde. Festival costs $15.95 plus $3 S&L. See the ad elsewhere in this issue for details on how to order, or call (800) 358-6274.

—JA

GORDON DOWN UNDER

Editor:
In the February Stereophile (p.3), you again mention J. Gordon Holt's early days at High Fidelity before he founded his "underground" journal. Nobody ever mentions his tenure at (horrors) Hi Fi/Stereo Review.

I gleefully enclose some photocopies of his erstwhile column, "Sound and the Query." With its Gaufknerian/Shakespearean echoes ("...a tale told by an idiot, full of sound and fury, signifying nothing"), it sounds like a description of a tweako article in some present-day journals.

But note especially the description of JGH as a transplanted Aussie. Is this true, or did Old Golden Ears playfully disseminate disinformation, as did good old William Claude Dukinfield (W.C. Fields) many years ago?

Chuck Crawford
St. Albans, WV

Although an American, the venerable JGH did indeed spend part of his youth in Australia before returning to the US after WWII. My thanks to Mr. Crawford for adding some more flesh to the legend.

—JA

DAMAGED GOODS

Editor:
I really look forward to receiving my issue of Stereophile each month. So much so that, when it reaches my home, my wife and child know not to touch or open the issue: Opening a Stereophile requires that Laguvulin be in my sniffer, chamber music be playing, and I be alone in my listening room. I covet each issue. I savor the physicality of the item. Consequently, I was very angry when my January '96 issue arrived in the most tattered condition of any I have received to date. I've had them arrive with long box-cutter wounds running diagonally across, three pages deep! I just accepted it. But each time I refer back to those issues, it bugs me. But the very first issue of the year! Damn.

Do you understand how I feel? Stereophile is brilliantly written and wonderfully packaged. I would appreciate it if you would replace my January '96 issue, thereby allowing me to start this year off the right way.

Adren Jarred
Bakersfield, CA

Sorry about the tattered issue, Mr. Jarred. A replacement is on the way.

—JA

WELL-PRODUCED GOODS

Editor:
I have been a Stereophile subscriber for over two years now and enjoy it immensely. Out of its 80,000 readers, however, I'm probably unique: I'm 17 and an avid high-end enthusiast.

It started out when I was browsing around for a mid-fi receiver. I ended up in high-end stores, astonished at what I was hearing. I began to educate myself, using every book I could get my hands on as well as Stereophile. I also asked for and received brochures from your advertisers.

We regret that resources do not permit us to reply individually to letters, particularly those requesting advice about specific equipment purchases. We are also unable to take telephone calls regarding equipment purchases. Were we to do this, a significant service charge would have to be assessed—and we don't have time to do it anyway! Although all letters are read and noted, only those of general interest are selected for publication. Please note, however, that published letters are subject to editing, particularly if they are very long or address more than one topic. All correspondents should include their name, address, and a daytime telephone number.

Stereophile, April 1996

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With all of this newly acquired knowledge I’d gained, I set out to build my own high-end system. What I encountered appalled me. I wasn’t taken seriously by any of the dealers in Cincinnati. They often bluntly ignored me. One dealer even responded, “The receivers are in the other room,” when I asked to hear a preamp/amp combo.

I eventually found a dealer 100 miles to the north (Progressive Audio) that not only would accommodate me, went out of their way to please me. I ended up getting a system consisting of Parasound 2200 II/Aragon Aurum/Adcom GDA-700/Rotel 965 and AudioQuest/Kimber wiring. At each stage I was allowed to scrutinize the various products in my own home. Due to the fact I’m so young, Progressive gave me special pricing. Even with this generosity, it took me two years to complete the system. I now have an even greater admiration of music, both recorded and live.

By now I hear you asking, “Why the hell is he telling me this?” I just wanted to let you know that your magazine is not only entertaining and educational, but also influential. Influential? Yup, I plan to pursue a degree in electrical engineering because of my love of high-end audio.

**Stereophile** is one of the best publications, period. Each of your contributing editors has an articulate and cogent manner, yet they each present a unique style. I just want to say thank you for a great publication.  

**Joe Venable**  
**VenableJR@aol.com**

THE SAVING GRACE

**Editor:**  
Stereophile’s saving grace is its “Letters” section, where you generously allow criticisms and depreciations to air. It balances out all the hot air in so many of the product reviews and articles.

**Neil McLaughlin**  
**Eureka, CA**

STOP THE INSANITY!

**Editor:**  
Okay, I’ll admit that I’m one of those people who have subscribed, let the subscription lapse, but now find myself inexplicably drawn to the local bookstore to buy your magazine. I don’t seem to be able to stop reading Stereophile in spite of my occasional anger with it.

The whole “single-ended triode” issue has become as tiresome for myself as I’m sure it has for other Stereophile devotees. In Sam Tellig’s recent ramblings (Vol.19 No.1), we are informed by our hero — yes, I’m a Sam fan — that the 10 Wpjc Jadiis is the “bending end” of all audio amps. By this time, all Stereophile readers must know that 300B SE amps have a certain signature sound that many find appealing. We know also that “thrilling yet natural edge” and “grainless” are euphemisms for rolled-off highs, and that since Sam’s column is never accompanied by measurements, he can “say” that the treble is not rolled-off without the encumbrances of facts to the contrary. It’s a simple fact that harmonic distortion and nonlinear frequency plots make these amps sound good — that’s okay… let’s all just admit it and move on, enough ruminating!

Look, kids, if I’m spending $13,000 for a couple of hoity-toity monoblocks, they’d better come with a few acres of land and maybe a hot tub. Is this the same Sam who told us (only 15 months ago) that we should buy the Power Station/C1-3400 combo ($480) because we were not going to buy the $10,000 player/processor combo?

Where was Sam in those months he was gone? Did you send him to an arrogance-enhancing seminar where he was forced to march lock-stepped with the Stereophile party line? You claim that you do not bow to your advertisers when you review products. How are we to believe this when we’ve all witnessed your systematic destruction of some budding company or designer’s future because the product reviewed did not live up to your expectations, while older, more familiar companies are given the opportunity to repair malfunctioning review samples and/or even replace them with “updated” versions? [?!—Ed]

Additionally, high-end manufacturers and Stereophile are really selling the same thing… elitist attitude! The notion that exclusivity in and of itself is a necessary attribute if a product is to receive support is nonsense. No matter how you delude yourselves, in the end you are either supporting or refusing to support products in the marketplace through your reviews.

Stereophile promotes the use of carefully oriented and ridiculously expensive ebony hockey pucks to change the sound of audio systems while less and less ebony is available to instrument makers. Cable jackets, brass dots, and other neo-(Peter)-Beltsims take up space in Stereophile while the new Rogers subwoofer for the LS3/5a gets zero ink! Stop the insanity!

I believe that most of us who love music have emotional relationships with the music and the audio systems we listen to. Just as our relationships with other people are not perfect, our relationships with the music and necessary audio gear cannot be expected to be perfect. The decision of how much money is spent on audio equipment and related snake oil is one that individuals have to make for themselves. I feel comfortable in suggesting that individuals who spend more than three times this country’s average annual income on an audio system should at least attempt to understand their motivation in doing so.

**John DiLeonardo**  
**Verona, PA**

PS. A couple of points I forgot to address above:

1) I believe that the whole Home Theater movement is proof for the existence of the Anti-Christ.

2) At times I tend to overstate my case.

3) I continue to look forward to each and every issue of Stereophile.

YOU’RE WRONG

**Editor:**  
I am writing to voice my total disagreement with John Atkinson’s Follow-Up review of the Coincident Speaker Technology Troubadour loudspeaker (February ’96, Vol.19 No.2, p.185). For the last 10 years, I have owned and thoroughly enjoyed the original Quad [electrostatic loudspeaker]. I was not tempted to change to any other speaker, because overall I felt the excellence of the Quad could not be bettered. The list of other speakers I auditioned included Wilson WATT 3, Quad ESL-63, Martin-Logan CLS and Quest, Apogee Stage, and many others.

All that changed when I heard the Troubadors speakers driven by a 7W single-ended amplifier. This combination sounded so right, so musically palpable, that I finally felt the time had come to give up my listening room to these new speakers.

I have now lived with the Troubadors for over four months and, if anything, I am even more enamored of these speakers. The soundstaging is in a class by itself. The size of the image and the precision within that image are, in my experience, unequalled. The Troubadour virtually replicates the original source.

Contrary to the opinion of JA, the Troubador is very immediate-sounding in the midrange and more involving than any other speaker I have ever had the pleasure of auditioning. However, the Troubador does require some time to break-in fully. I found that they con-
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continued to improve until I had reached 100 hours.

I want to inform Stereophile readers not to overlook the Troubadour speakers, for they are truly revelatory. Do not permit the reviews published in these pages to deprive you of experiencing what I, in my humble estimation, consider to be one of the finest speakers available.

Jayson Cristofaro
Montreal, Quebec, Canada

Top 10 Wrong
Editor: 

The October '95 "Recommended Components": no D tonearms; no D CD players; no D phono preamps; no D power amps; no ratings of lower-priced interconnects or speaker cables. Thus I submit the top 10 reasons Stereophile is poorly covering budget or entry-level high-end gear:

1) Inexpensive equipment arrives for review, weighs so little it was accidently thrown out with the junk mail.

2) Low prices mean small ads in Stereophile.

3) Cheap gear represents chump change to wealthy reviewers.

4) You think your readers are wealthier than they are.

5) Old, white, male reviewers consider that auditioning cheap equipment is women's work.

6) Value-priced manufacturers don't wine, dine, and concert reviewers at their London offices and factory.

7) Analog lovers confused, think C- and D-rated equipment means digital.

8) Budget-equipment designers aren't on first-name basis with JA, RH, and others.

9) Doesn't sound as good as A- and B-rated gear.

10) You just don't care anymore.

You have claimed many times to serve your readers. Thus I command Stereophile to review much more budget, entry-level, high-value-for-dollar gear than you do now. I also command that by the October '96 "Recommended Components," all equipment categories will be complete with D-rated gear.

Bob Poling
Stow, OH

Wrong Credit
Editor: 

I was startled at the credit Tom Conrad gave me in his review of the Duke Ellington Road Band CD in the February Stereophile (p.115). The performance was recorded by the late and great Wally Heider, who was the best there ever was at recording a band, either on location or in the studio. My role was shaping up the master from a third-generation (7/8"ips) dub. On the LP issue I was listed as "engineer," with no reference to Wally. I haven't seen the CD, but I suppose Bob Thiel handled it the same way. Likely he wasn't aware that Wally was involved.

I was also surprised that you knew I was interested in Duke and his men. Actually, I began listening to Duke in 1931!

Jack Towers
Ashton, MD

Accuracy or Enjoyment?
Editor: 

Thanks to Jonathan Scull for writing up his chat with recording engineer Gabe Wiener in the February '96 issue (p.49). I also enjoyed JS's interview with Opus 3 engineer Jan-Eric Persson a few months back. As a recording hobbyist (I do multi-mike, live-to-stereo rock and blues recordings) and audiophile, I enjoy hearing about the application of high-end gear and production values to the recording process.

I first encountered Gabe on CompuServe's CEAUDIO forum, where his contributions were consistently informative and thought-provoking. (Though not quite as entertaining as Scull and Fremer blowing cloudy-raspberry at each other a few years back.) Have you two patched things up now that you're back on the same team?

Gabe hit the nail on the head regarding the LP/CD/Analog/Digital/Tube/Solid-State debates when he differentiated between accuracy in reproduction and listening for pleasure. On one hand, the recording process and medium should capture and reproduce the music as accurately as possible. On the other hand, what I do with that recording in the comfort of my own home to heighten my subjective experience of the music is my prerogative. If a vinyl-playin', filament-glowin', impedance-swingin', distortion-generatin' contraption can help me dig the music, I'll buy it, listen to it, and enjoy it. But I don't confuse this with accuracy. And by no means will such a component find its way into my recording rig!

Russ Stratton
Huntington Beach, CA

74037.2451@Compuserve.com

Skill or Luck?
Editor: 

Concerning John Atkinson's editorial in "As We See It" in the January 1996 issue, I think either he's being modest or a little confused. He wrote that it's unknowable whether a recording during playback "reflects true accuracy or mere coincidental euphony," because there is no way for us to know "what the engineers and producers have done to change quality throughout the recording process."

I think this may be true for those who don't frequent live performances and can't tell the real from the recorded. Also, I've no problem if the recorded result is due to skill or luck, or if the engineer can stay lucky—who cares? But for a recording engineer to admit to such a dilemma is quite different.

Perhaps there are some novice recording engineers who regard the recording process as an "art" that requires mostly personal guesswork and trial and error. But there are also many professionals with real experience who think otherwise and know it's no fluke, day after day. And regardless of how imprecise, unscientific, or artistic the present recording process may be, it shouldn't detract from the ultimate goal and mission of high fidelity—call it the absolute sound, coincidental euphony, or whatever. For that goal to be anything else, it's simply not hi-fi or the original performance anymore—or should we have an artistic engineering performance?!

I'm convinced that, with enough practice and real technical advances, in time even the "art" of recording can progress into a more precise science giving more or less predictable results for the ultimate benefit of us audiophiles.

Tom T. Wong
Los Angeles, CA

Good timing
Editor: 

What a great coincidence greeted me with your January issue: that beautiful Nagra on the cover and the story of another recording project inside. Good timing!

The coincidence is that a colleague and I were about to begin recording sessions for a new CD project of a local chorus. As engineer and producer, respectively, of live recordings for the local public radio station, Dave Sluberski and I have spent years confronting some of the same difficulties that you have encountered with your projects.

I bet the public assumes that the engineering of a recording proceeds according to established scientific principles, applied with all the rigorous exactitude of a clinical drug trial. Well, not always. With most recordings of live events, one must work around cir-
cumstances that are usually not under the recordist's control.

For instance, microphone placement, the single most important element of recording, often becomes compromised. Maybe we'd like to put the mike stand in the second row of the audience, but what if those seats are sold? Or perhaps the sweet spot is above the conductor's head. Sorry, the piano has to be rolled out for the concerto, and that big tripod holding the mike is right where the parishioners have to park. Dave has to think fast and improvise, if there is to be the hope of a good tape.

Audiences are sometimes an unwelcome part of the show. We recently recorded a beautiful voice and guitar duet, featuring Gene Bertoncini, in the wonderful acoustic of a former church that resembles Kingsway Hall in London. Our omni pickup was capturing a vast, enveloping space, imparting a gorgeous glow to the lushed, haunting lines of a Jobim walse. Magic happened, musical and sonic, for about a minute and a half. Suddenly, an elderly patron found it necessary to clear his throat, a prolonged task he pursued with vigor and sustained energy, producing a virtuoso display of sounds fascinating in their vivid glottal expressiveness. All of which we captured ff.

Then there is Murphy and his Law. As you discovered on a recent project, sometimes things that shouldn't break, do. The recordist has only one shot at capturing a live performance. When the unlikely suddenly becomes the inevitable, it is the engineer's experience, knowledge, determination, and, as you say, "inspired guess" that often saves the day.

The stakes are even higher for a major-label recording. Time is money. There is little of either to spend experimenting or chasing down a problem. So engineers tend to be quite conservative, sticking with proven techniques and tested equipment, even if sound quality is compromised. We audiophiles are constantly peevd at the mediocrec fidelity of big-label records, but given the realities of time, cost, and competing priorities, we should probably be happy that some are good at all. Dave and I are fortunate that we can risk experimentation. We learn something new each time we roll tape, and almost always walk away with something that is technically good.

Our chorus recording is an example of how even a very favorable situation still imposes limitations and requires difficult decisions. We are recording in a church that is very familiar to us, and we are going to use mike patterns and basic positions that have worked well before and that should be appropriate for this music. It is Sunday, and the last service ends at noon. Since our session starts at two, and it takes a while for parishioners to leave, Dave and I have about 90 minutes to set up and test everything.

Two AKG 414 mikes go up in the center, one set to figure-8, the other set to omni, giving a modified MS pattern that creates two hemispheres of sensitivity, left and right. Two stands stand 50" either side of that, each holding a 414 set to omni. To minimize noise and cable loss, the preamps of a portable Neve mixer boost the mike outputs to drive the long cable snake to the remote truck. Inside the truck, a DDA console provides a matrix for the MS and the mix of all the sound, which is recorded to DAT on Sony 7010 machines (two, in case one fails).

Set-up goes fine, everything works, we're on time and out of breath. Our clients are friends, so this is a fairly relaxed scene. There is not a fortune riding on the minute hand, and there are no huge egos being thrown around. (For an example of how it can be in the big time, see the documentary of Bernstein recording West Side Story.) Still, we do have only six sessions over the next three months to record 26 selections, and no one has extra time or money to make up for lost hours. We're all serious about making a great record, and that's pressure enough!

Now comes a moment of truth. We need to establish the soundscape of the entire disc right at the beginning, and keep it the same throughout, as any big changes in recorded space or perspective could break the spell for the listener. The monitoring in the truck is not the greatest, but it is all we have at the moment. Our initial placement is delivering nice ambience and the ensemble voices sound natural, yet the image is too generalized. I can't pick out the individual voices among the 18. I'm also afraid that all the swimmny room sound will become tiresome during the 65-minute duration of the CD. Neither do we want it sounding too close-up and analytical. We need to preserve the balance of ensemble blend and soloistic clarity that is the special quality of a chamber chorus.

We make a quick, educated guess, and move the mike stands forward 18". Bingo! The blob of sound snaps into focus, and I can hear each familiar voice. Heck, the Fi is so Hi, I can hear what color their shirts are!

Is it perfect? No. Could it be better? Probably. Is it good enough to properly represent the sound of the artists, bring across the beauty of the music, and give a listener the sense of being present with the performers? Yes, we think so.

Now we settle down through five more sessions. Dave and I have to keep the sound consistent and avoid any equipment failures. We'll deal with balancing organ accompaniment and vocal solos. We'll keep our ears open for noises in the church that would ruin a take. The singers will have to stay healthy through the flu season, and maintain their energy and concentration through the many takes and patches—the inevitable, occasionally exccurating effort of creating a product that can withstand the scrutiny of the public.

Then come the long sessions of editing, when Dave and conductor Roger Wilhemin will piece it all together, somehow cutting around all the little noises and slips. We'll write the book, choose the cover, acquire rights, pay royalties, hire the printer and replicator.

The result will be With Heart and Voice: Christmas Across America, by Madrigalia, featuring many first recordings of holiday music by such American composers as Ned Rorem, Libby Larsen, and Leo Sowerby. We hope that the disc will be a true reflection of this fine group, as well as a showcase for some remarkable music.

Oh, yes, hope it sounds good, too.

And good luck to you with future projects. It is a service to the hobby, offering listeners insight into the alchemy of recording. I look forward to hearing your results.

Cari Pultz
Rochester, NY

I'm reminded when I recorded Elgar's Dream of Gerontius in England's Ely Cathedral back in 1984. (An excerpt from this recording appeared on Stereophile's Test CD 2.) I was just about to hang the Soundfield microphone across the nave when the Assistant Dean told me that he would not allow it. "Why can't you just sit in the audience with the microphone on your lap?" he asked. We compromised on a 12" stand immediately in front of the conductor's podium.

--JA

GOOD POINTS
Editor:
While I agree wholeheartedly with John Atkinson's exuberant praise for

2 Available from Madrigalia Ltd., P.O. Box 92068, Rochester, NY 14692. Advance orders are welcome.
Rotel's RSP-960AX. surround-sound processor features full input/output switching for an elaborate audio/video system, Dolby ProLogic decoding, and wireless remote-control for under $600.

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At the heart of the Rotel Home Theater System is the RSP-960AX. This superbly designed, remote-controlled, Dolby Prologic decoder features an SSM-2126A chip for accurate channel steering and wide dynamic range. It accepts up to three video sources, and even includes a line input for CD or Tuner, and a Tape monitor. Pair this flexible controller with our RB-956AX — a high-current, six-channel x 40-watt rms amplifier and you have the foundation for a truly remarkable system. Need something to shake the plaster off your walls? Bridge the RB-956AX into a 3 x 100-watt mono amplifier and add our 120-watt-per-channel stereo amplifier for increased power and sonic detail.

Want even more muscle to experience the full weight of those bone-jarring explosions? Hook up Rotel's RB-985 It's a 5 x 100-watt high-current design that will let you feel every thunderous tremor, yet reveal even the tiniest detail in the soundtrack. And if nothing short of feeling T-Rex's hot breath on your face is your idea of cinematic ecstasy, then put together five of our RMB-100 mono block amplifiers with an RSP-960. Just be sure to clean up the popcorn when it's all over.

What the reviewers are saying about Rotel.

RSP-960AX. "I was really surprised when I popped the cover. How in the world can Rotel sell this product for only $599?" Edward J. Foster, High Performance Review, Vol. 11, No. 2, June 1994.

RB-985THX. "As a five-channel amp, I can't think of a single fault I'd ascribe to the Rotel... The Rotel will put you in the all-star game for a grand, which is the lowest sticker price yet for a five-channel THX amp." Home Theater Technology, Nov. 1995.

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the Nagra-I D 4-track digital field recorder in the January Stereophile (p.185), as the first owner of a digital Nagra in the US, I would like to point out some of the other salient features of the "D" not mentioned in his review:

1) As DAT users are well aware, there is a problem of compatibility with DAT tapes recorded on one machine and played back on another. The Nagra engineers have solved this problem by providing a tracking control similar to that on a VCR.

2) A robust ¼" open reel format. If a DAT ever gets jammed in its transport—an occurrence that does happen once in a while—the recording is likely destroyed. This calamity cannot occur on a Nagra-D.

3) Full SMPTE/EBU time-code chase synchronization.

4) Two-channel insert editing.

5) Nondestructive fades: fades can be overridden in post.

6) Channels 1 and 2 can be copied internally to channels 3 and 4 as a safety backup or in order to set a different gain for each pair of channels.

7) An analog cue track containing a sum of all four digital channels for cueing. In addition, voice cues can be inserted via a microphone.

These are significant features that are not available on DAT machines, and that relegate the latter to the consumer status that they were originally designed to serve.

JEFF SILBERMAN
Mill Valley, CA

THE KATZ KOMMENTS

Editor: The January '96 Stereophile was chock full—a well-balanced collection of reviews and industry comments. I feel compelled to add my own:

Bob Harley's coverage of the October '95 AES Convention (pp.41-49) revealed that many industry professionals care about good sound. Bob quoted me, in my role as Chairman of the AES workshop "Mastering 20-bit and Beyond," as saying that transfer to and from hard disk degrades sound due to jitter. I did not make that statement with absolute assurance; to my ears, any degradation during this type of transfer is most subtle. In fact, it is difficult to attribute audible degradation to any one culprit. While I believe that changes due to jitter occur during these transfers, I am equally positive that the data are preserved during the transfer [see this issue's "As We See It"—Ed.]. We need to make some tests to show what happens to the jitter of a source when transferred between media. Is it cumulative, or (as I believe) does it get randomly "worse" or "better" from transfer to transfer?

The inability to have control over the critical glass mastering stage is frustrating for the critical recording engineer. For example, when a glass master is cut, the regularity of spacing of the pits on the disc is directly related to the stability of the system bit-clock and the plateter motion. But there is an indirect and complex relationship between the jitter of the source (tape or disc) and the final resulting glass master, mostly due to the number of phase-locked loops between the source and the copy. I would like to see a test comparing two glass masters, one made from a PCM-1630 tape that had been dubbed from a jittery source and the other from a '1630 tape that had been dubbed from a clean source. Does one of them sound nastier than the other? Or does the result simply depend on the stability of the clocks and mechanisms in use while the glass master is being cut?

At the convention, Sony's David Smith dropped another bombshell...a new type of master cutting system which uses 1 gigabyte of flash RAM as a source, instead of '1630 tape or CD-R. This is designed for absolutely minimum jitter: during the cutting, there is only one clock; all interfering clocks and sources can be shut off. The system retrofits to any standard type of glassmaster cutter. As I write this, Sony is performing preliminary tests on this device (to be called "The Ultimate Cutter"). Every CD mastering plant can have one for just $100,000! If this cutter works, and the public demands better quality on their pressed CDs, we can expect better-sounding CDs in 1996.

I enjoyed John Atkinson's review of the Nagra-I D recorder (p.185). While I rent the Nagra for location recording, it's more than a little pricey to own. I plan to configure my own 24-bit Sonic Solutions system to use on the road, with removable hard disks—this even eliminates one transfer step before editing.

JA, you can use a single external A/D converter with the Nagra and still record four tracks simultaneously. Put the higher-quality ADC on the primary tracks (for the main mikes), and use the Nagra's internal ADC on the secondary tracks (for the spaced omnis); all you have to do is set the Nagra's master clock to "external." The external A/D will run on its own clock, which maintains lowest jitter for that conversion. The Nagra's internal ADCs may have slightly higher jitter than if you used the Nagra's internal sync, but this may be a better sonic tradeoff, for you have chosen a higher-quality ADC for the primary microphones. In a similar manner, you can use two external ADCs, slaving the second off the first. The second may have slightly lower conversion quality due to a jittery PLL on its sync input, thus you should choose the ADC that is running on its internal clock for the main pair of microphones.

I am glad that Shannon Dickson took a much-needed objective look at HDCD (p.107). Shannon, I too want to know why Reference Recordings' HDCD Sampler Volume 2 did not contain a valid comparison between the type of ADC in common use today and the HDCD converter. No engineer these days will choose the older-style converters in a Sony PCM-1630 to make audiophile recordings—the 1630 A/D has been superseded for almost eight years! Shannon also correctly points out that it is unfair to require additional sound-degrading components in the signal path to reproduce standard CDs. Shannon removed these components in order to evaluate the HDCD system more fairly.

The point-counterpoint between Steve Guttenberg and Joel Silver on Home Theater sound (p.120) was entertaining and informative. Steve would have gained even more points if he had discussed the acoustic compromises in most Home Theater systems. For example, most good audiophile speakers sound better at a distance from any wall. But the practicalities of most Home Theater systems force the loudspeakers to be near a wall, where the video monitor is also usually located. Also, the presence of a large video monitor between a pair of loudspeakers invariably affects the quality of the stereo image and the soundstage depth. I haven't seen any Home Theater system that passes the LEDH test when the video monitor is in place. Usually the sound path, which is supposed to appear to be a rainbow, looks more like a corkscrew!

The only Home Theater system I've heard that qualifies as "audiophile" in my book uses a ceiling-mounted Barco projector and a motorized screen: When you want to reproduce audio-only recordings, the screen collapses into the ceiling. In this age of multimedia, I hope that musicians and record companies will continue to make audio-only recordings into the next century. I don't need a video monitor to enjoy classical music, even opera.

Stereophile, April 1996
"Some of the Sweetest Valve Amps in the World Come from VAC . . .

"In this age of 10-watters masquerading as real amps, the PA80/80 is something of an aminal, rugged enough to wear 2 ohm taps as well as 4 and 8 . . . the fit and construction are superb . . . the PA80/80 looks expensive and, well, classy.

"Sonically the VAC is simply a dream . . . The bass is so well controlled that KT88 devotees will buy it just to flip the bird to 300B users . . . Imaging? It could teach the PC cretins a thing or two about virtual reality. Speed? Up there with some serious solid-state. Composure? This baby could have been through Eton.

"This stuff is too nice to ignore."

Ken Kessler, HiFi News & Record Review, September 1995
Lastly, it's nice to see Michael Fremer give credit to mastering engineer Joe Gastwirt in his review of The Foremen's CD (p.307). Few people are aware of the mastering engineer's contributions to recordings. I would like to see other Stereophile reviewers list the mastering engineer in their record reviews. (I have an ulterior motive—I mastered two CDs that were favorably reviewed in the January issue.)

Bob Karz
Digital Domain, New York City
http://www.panix.com/~bokkarz

WHAT'S WRONG WITH THIS PICTURE?

Editor:
Steve Guttenberg proves exactly nothing by comparing Home Theater sound with that of CDs and LPs ("Lights in a Box?", January 1996). As Guttenberg himself indicated, the comparison should be between film sound and Home Theater sound. As to laserdisc sound being inferior to that of CD and LP, I would certainly expect that; the sound on the laserdisc has been drastically manipulated and distorted (for artistic effect), while that of the CD and LP almost certainly is derived from sources several generations closer to the original.

In addition, Guttenberg bases his preference for the theater experience on idyllic conditions that are rarely found in real life. In real life, the moviegoer has to put up with compromised, "one-size-fits-all" screens used for all movies, regardless of the aspect ratio in which they were intended to be shown. Ditto, the distraction of the second version of the movie thrown upon the ceiling as a reflection from the screen. In real life, midway through the opening credits, I have had to search the aisles of the complex for a projectionist to switch to the right lens; after I found him and he corrected the error (which made all the objects on the screen look like tall, thin beanpoles), his comment was, "You'd think somebody would have noticed by now; it's been this way all along."

Contrary to Guttenberg's assertion "...in the cinema, the left-center/right speakers are all behind the screen," I have found this to be true in only a minute portion of the multi-channel movies I have seen, from Fantasia and The Robe onward. In the old days, the usual setup was an Altec-Lansing Voice of the Theater three-way horn speaker behind the screen and box speakers mounted on the wall flanking the screen. More recently, it tends toward three box speakers, inferior to what I have at home, mounted along the front wall somewhere near the ceiling.

The sound is further degraded by soundtracks from other movies leaking into adjacent theaters. If you're trying to lose yourself in Merchant Ivory in one theater, it's hard to ignore the Rainbow/Die Hard/Terminator ordnance leaking in from the next.

Guttenberg has a higher regard for audiences than I do, saying: "In a real theater, the crowd's tears and joys are communally felt. The interaction of the audience and the film is a living, breathing 'effect' that Home Theater can never approach." My own experience is that audiences are noisy, inconsiderate, selfish, and rude. They carry a running commentary, explain the picture—usually incorrectly—to each other, talk to the screen, eat noisily, and frequently make me wonder why they have paid seven-point-five bucks or so to see something to which they pay so little attention. Further, as audiences—fortunately—become more intercultural, they respond in different ways; for example, dramatic situations to which one culture responds with rapt silence elicits tension-relieving chuckles and giggles from those from a different culture.

Guttenberg's scorn is misguided when he claims my ilk stay away from movie houses because we "don't like crowds or waiting in line. Poor babies." I, for one, stay away because I find the inappropriate behavior of audiences distracting.

Besides which, if we're going to hold up the theoretical motion picture as the ultimate technology, we first have to face up to one crucial issue: How come, after 100 years, they still can't keep the wheels on the stagecoach from turning backwards?  
P. A. Alter
Hyattsville, MD

LIGHTS IN A BOX?

Editor:
Both Steve Guttenberg and Joel Silver made some interesting points in their "Lights in a Box?" exchange (January 96, p.120).

Guttenberg raises the tired complaint of Home Theater "killing" high-end audio. The logic behind this eludes me. Most people for whom television is the primary source of home entertainment are not potential converts to high-end audio, regardless of the availability of Home Theater. High-end audio, the hobby, like any cultish special interest, is inherently self-limiting; there are a limited number of people it will attract. Period. High-end audio, the industry, is perfectly healthy. The fact that it isn't growing exponentially doesn't mean it's dying—an industry serving a "silver" market is healthy if it can sustain a steady state. (Incidentally, I don't know which companies Guttenberg is referring to, but in my experience a "small" high-end company has three or four employees, a "large" one 15 or 20.)

As to whether manufacturers and dealers are "selling out" by pandering to the Home Theater crowd, well, they are in business to make and sell products, aren't they? Dealers who proselytize about what people ought to want instead of supplying what they do want are traveling the short road to the unemploy-ment office. New converts to high-end audio will come in through the side door of Home Theater. People are going into hi-fi shops who haven't set foot in an electronics store in 20 years. There's nothing to worry about.

But that's no endorsement of television, the instrument or the institution: Guttenberg (and Steve Andrus in the January "Letters," pp.23-25) is dead-on accurate in his dismissal of NTSC video as a mid-fi format compared to film. The smaller the screen, the better the video image. What's wrong with this picture? Affordable, mass-market High Definition Television is still a long way off. But Joel Silver is right, too: one day video will probably equal film as a visual medium. The marketing and engineering momentum behind it guarantees that. But at present even a mediocre movie theater is several orders of magnitude better than Home Theater.

Is the primary purpose of Home Theater really the enjoyment of movies at home? Why does no one discuss the absurd cost-benefit ratio of Home Theater? A good Home Theater system, not the absolute cutting-edge, but reasonably high-end, is $20,000 to $50,000. That's a lot of movie tickets! You could go to thousands of movies for the cost of a typical Home Theater. And not just at your local shopping mall's popcorn-strewn multiplex. The experience of seeing a film in a beautiful, sumptuous old theater (the Fox in Atlanta, the Paramount in Oakland) is something that can't be duplicated at home at any price. A few months ago I saw the fully restored Lawrence of Arabia at the Paramount—an evening that included a raffle, an organist, some old newreels and cartoons, and a classic epic film on a truly wide screen, all of it enjoyed from a big cushy comfortable seat. The cost? $5. That's an entertainment value.
We racked our brains to find a way to tell you how good the Totem Mani-2 really is. And then a Mani-2 owner did it better than we could!

We have had the Totems in our home for roughly three months. The Totem Mani-2s are the finest loudspeakers I have listened to regardless of price and I have listened long and hard to the likes of Audio Labs, Martin Logans (all models but the Statement), Vandersteens, Paradigms, Magneplanars, Apogees, etc. etc. The Mani-2s create a larger and far more detailed sound stage than any of the above. The highs are fluid, detailed and spacious, without any edginess. The lows are fast, deep, full and defined. And the midrange... the midrange is warm, musical and expansive. Your speakers have returned the word "presence" to my audio-vocabulary. I could go on and on. The bottom line is that for the first time in years I find myself lost in the MUSIC rather than listening to my system.

I want to thank you all at Totem for bringing quality, accountability and value back to high end audio. I also want to tell you how helpful, informative and enthusiastic (Of course, he didn’t mention the double box with lock miter cabinet joints, the push-pull twin woofers that maintain control below 20 Hz, the space-age borosilicate damping, or the twin WBT binding posts. But he told you the essential...they sound wonderful!)
As one who has installed and serviced more Home Theaters than I care to remember, I have to say that I’ve never understood the desire of people to have all that stuff in their homes. To my way of thinking, all anyone needs to enjoy movies at home is a decent TV, a decent VCR, a modest integrated amp, and a pair of good bookshelf speakers. A laserdisc player is a nice option if you want a bit better picture and sound. But a projector mounted in the ceiling and big, bloated, bombastic surround-sound? Spielberg’s dinosaurs stomping through your living room? Yuck.

Home Theater is just a huge tasteless exercise in conspicuous consumption.

Just my opinion, of course. If all that money were being spent for the sake of great films, I might not complain. But I know it isn’t. Home Theaters are sold to upper-middle-class folks so they can stay abreast in the status race and so they can enjoy larger-than-life sitcoms, soap operas, and infomercials. God help us.

BARRY WILLIS
Mill Valley, CA

IMMEDIATE ATTENTION

Editor:
It’s just past midnight, I haven’t yet finished my newest copy of StereoPhile, and I’m writing because the Steve Guttenberg/Joel Silver articles on Home Theater demand immediate attention.

Mr. Guttenberg eloquently expresses an opinion that the mere existence of surround-sound will detract from appreciation of really great music and is an affront to a true audiophile. I am not an audiophile. I am, instead, a fairly knowledgeable, fairly discriminating, middle-aged man who happens to love music. I earn my daily bread as a Sales Associate (Home Audio Department) for a middle-sized chain electronics retailer. Most of my customers are not audiophiles. They are, almost without exception, people with a passion for music who have never heard really good recorded music—people whose souls yearn for hi-fi while their wallets struggle to achieve mid-fi levels, if you will.

Home Theater, as it exists today, does not produce the best music possible. So what? By definition, only one system (or any critical reviewer) have ever auditioned was the best. All others were less. This simple fact does not stop me (or any critical reviewer) from appreciating the merits of those other, lesser systems. Proof of my assertion is contained in Stereophile’s “Recommended Components.”

Often, my customers suffer from the same educational blight Mr. Guttenberg correctly decries: excessive bass used to mask harsh treble and missing mid-range. They can’t help it, no one ever told them that “loud” isn’t necessarily good, or that recorded music should ideally sound just like a live performance. Yet my customers know—at some intrinsic level—that the music and sound they live with daily just isn’t right. How else explain a population that has produced street music like the likes of Philadelphia a cappella harmony, delta blues, or New Orleans jazz?

Especially given the immediate desire to possess almost any new equipment promising more, and better, music than ever before?

For most, a move into Home Theater is a move into better sound (admittedly mid-fi) than they have ever heard before. They spend hours and hours agonizing between Fisher and Kenwood. Their decisions are most often based on what their parents, or their friends, bought. They believe Sony invented CD technology and that any three-way speaker makes better sound than any two-way speaker, regardless of cost. But they listen when I demonstrate our premium brands. It’s part of the courtship ritual. Most don’t really believe better sound is possible. Many are simply too conservative to do so, even when they hear the differences. They often think my demonstrations are faked, using special recordings. In fact, the most-often-heard objections I have to overcome are: 1) Only the speakers make a difference anyway; 2) It’s good enough for me; and 3) It’s too expensive. But when they hear the differences they like the differences, and sometimes they buy the differences. When they do, I’ve done a good job—and made another convert.

Please note that each of the above objections totally ignores the improved sound available through modern technology. I believe stereo has become so commonplace that it has joined the telephone. The common attitude is, “Everyone has one and they all do the same job.” People have forgotten that music is a luxury, that good recorded music is a recent invention, that stereo is both a toy and a hobby. We in the industry must counteract this belief. We must convince the public that, just as in golf, skiing, fishing, and hang-gliding, those with better toys do it better; and we must prove it, one listener at a time.

Home Theater is another arena, another tool, to show skeptics the differences between lo-fi and mid-fi. During demonstrations I frequently tell customers that I can sell them good sound or I can sell them cheap sound, but I can’t sell them good cheap sound. Then I have to convince them they deserve the sound they like. Once I have established trust in the listener’s own ears, then is the time to move to the differences between mid-fi and hi-fi.

Home Theater creates its own market. Dolby Pro Logic is the hottest thing in sound. Nearly everybody who hears surround-sound wants surround-sound. I believe this is a Good Thing for Audio. The sound is far more natural than anything ever to come out of a television set, and the step from a more “realistic” gunshot or explosion to more realistic “music” is a small step. THX standards, in particular, offer an avenue to move customers away from the classic “more bass is better” mindset, simply because most people can’t afford two separate systems. Once an appreciation for natural movie sound is instilled, better musical performance must follow. Granted, music played on an average THX system is a far cry from a live orchestra performing in the Royal Albert Hall, but it is more accurate and realistic within its limitations than the typical booming bass, slurred mids, and screeching treble of the average mass-market system. Home Theater is single-handedly producing consumer interest in better, more natural sound during an age of overproduced electronic garbage, and it is generating the money necessary to attract large amounts of industry attention.

Bad cinema sound caught George Lucas’s attention, and the resultant THX certification program caused sweeping reforms in the way movie sound is produced and played. I think it’s time for each of us in the industry, at whatever level, to refocus our attention—on directing the attention (and money) into what sound can be, should be, rather than simply complaining about what Home Theater isn’t.

GARY SMITH
El Cerrito, CA

MUSIC OR NON-MUSIC

Editor:
I find it no coincidence that at least one member of the high-end community feels that Home Theater will be the death knell of the high-end audio industry (Steve Guttenberg, “Lights in a Box,” Vol.19 No.1). After all, one of the primary reasons for the fascination with Home Theater is the completely enveloping sound seeming to come from everywhere and nowhere, the loudspeakers disappearing. And who
Just playing this CD will make your system sound better!

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has promoted the idea that this is so good? Why, you have, your writers have, and virtually all of the high-end press has joined in.

How have you promoted the idea? By constantly stressing non-musical sonic attributes. Virtually all your articles leave the reproduction of the art of music as the poor cousin of sonic nirvana. You throw musical softballs at all the components you test, failing to discover if the system can even play all the notes. Want a good test? Try "What a Time" from Bruce Hornsby's Harbor Lights album (RCA 66114-2). The electric bass is running some long lines of sixteenth notes that I have heard reproduced cleanly. Would it surprise you to know that at least 90% of your "Recommended Components" will smear this bass line into mush that is unrecognizable and unfollowable?

One article, also in Vol.19 No.1, by Robert Harley, reviewing the MIT/Avalon/Spectral system, sums it up exactly where you and your writers attach maximum importance. Here are some excerpts from consecutive paragraphs under the subhead "Music": "soundstage that was considerably different...", "went from sounding terrific to sounding utterly spectacular..."; "The system threw a gigantic three-dimensional soundstage..."; "The soundstage's ability to extend up..."; "the system projected images..."; "system projected some of the percussion..."; "images thrown directly between the loudspeakers..."; "extraordinary imaging..."; "image locations and image size..."; "stunning spatial presentation..."; "remarkable soundstaging..."; "amazing soundstaging..."; "detailed description of the soundstage..."; "unique soundstaging..."

Is it any wonder that people are beginning to question the need to spend big bucks on a high-end system when a couple grands' worth of Sony/Bose surround will get them into that disappearing-speaker stuff? Try challenging the stuff you review. High-end audio should be distributed in a bell curve. You've got it looking like a graph of the Dow.

PARKER KING
The King's Stereo, Indianapolis, IN

ANALOG MUSIC
Editor:
Michael Fremer is to be commended for the insightful and humorous comments in his "Analog Corner" column.

Having been without a turntable for some time, I recently purchased a Thorens TD 320 Mk.III, to which I affixed my "vintage," a 1984, Shure V15b cartridge. The sound was incredible. My mid-70s stereo UK Beatles pressings sounded even better than I remembered, and even some "inferior" Canadian pressings (ie, the One Fine Morning LP by Lighthouse) sounded very good indeed.

At some point, Mr. Fremer might consider devoting an entire column to some of the very real differences in sonic quality that exist among import rock pressings. For instance, I have five import copies of The Rolling Stones' Their Satanic Majesties Request; two mid-70s UK pressings (1974 and 1978 — the Decca inner sleeves are dated on the reverse lower left corner); the infamous 1982, 3-D-cover, UK reissue pressing; a 1982 Japanese blue-vinyl pressing; and finally, an original 1967 green-label Decca pressing. None of the others, despite being import pressings, sound anything like the original, particularly in the bass response. The dynamics on the original also leap out at the listener much more so than on the others.

Why this should be, given that Decca presumably had access to the original master tapes, is unknown. On the other hand, my UK Beatles LPs (virtually all '70s pressings) sound wonderful (at least to me), with the odd exception of my copy of the "White Album." To compound this oddity, my UK white-vinyl copy of the "White Album" sounds pretty good. What, I wonder, is going on here? Additionally, it is interesting to note the remastering/remixing that the US Capitol engineers did for the Beatles' US releases. The original American pressings have a dynamic "wall-of-sound" quality, whereas the UK pressings I've heard have more "openness" between the instruments and voices.

I hope Mr. Fremer addresses these issues in the near future.

PETER W. CLERIDES
Los Gatos, CA

LINN/NAIM COMPARISONS
Editor:
As a Linn LP12/Ittok/Valhalla owner for many years, I read with great interest Wes Phillips's comparative review (Vol.19 No.2) of the Linn LP12 turntable equipped with Naim's Armaggedon and Linn's Lingo power supplies. Having just auditioned a comparison of the two modifications to the LP, I was amused by Wes's doubt that "there are even three stores in the country that could offer such a comparison." When I decided several weeks ago to upgrade my Linn, I called David Wilson at Accent on Music in Mount Kisco, New York and asked him if he could arrange a demonstration of the LP12 with the two different power supplies.

David made an evening appointment and set up the turntables with the Naim ARO tonearm. We listened for hours to recordings of late Beethoven quartets with the LaSalle Quartet, to Wilhelm Kempff playing Brahms, and to Ella. There was no doubt that both products provided improvement over the stock Valhalla. Both offered a well-balanced presentation, more detail, and a clearer insight into the music.

For me, however, the Naim Armaggedon made music come alive. The presentation was more vivid, natural, and involving. I became more immersed in the musicians' interpretations than ever before. Nuances of tone and texture, and gradations of dynamics, appeared that I had never heard before.

It was if the Armaggedon were shedding new light on areas that were previously in shadow. By revealing subtleties in Kempff's keyboard touch, it allowed me for the first time to hear ideas about the music that previously I was able to recognize only in the concert hall. Needless to say, I purchased the Naim.

At our next listening session David promises a comparison of the Naim ARO and Linn Ekos tonearms. Others, especially those who live in the NYC area, should know of the quality service and gear offered at Accent on Music, which is less than an hour north of Manhattan.

IRA SPAR
ispars@ramapo.edu

REAL LIFE
Editor:
Wes Phillips got it all wrong in "Car Tunes" (Stereophile, Vol.19 No.2, p.73)! If you wanna lead a happy audiophile life, never ever spend a lot of dough on a car stereo. It is far better when the sounds in your car or truck suck! They don't have to really suuuuck! Plain ol' suck is probably enough.

How's that? Okay, well, let's say you just dropped into High End City to kill a little time, and the descending but nevertheless Accommodating Stereo Salesman (A.S.S.) lets you audition the new Voice O'Thor 1000 Mk.V loudspeakers, the Snortonkoke monoblocks, Auditory Nirvana xcl-2700 line-stage preamp, solar-wind-powered, Awe-sum-Twesum Twin DAC-2000, and the Avant-Nazi AN-450 CD Transport, all wired with Tara Del Fuego Labs Octagonal Hollo-Core Reference PTFE 9000s, the cables and intercon-
Northstar Leading The Way and Lyric Hi Fi introduce for the first time ever... The Jadis JA 800 Amp (Balanced), the JP 200 Preamp (Balanced) and the Eurythmic 11 Speaker for you to hear and see at the Waldorf-Astoria in New York City. Sponsored by Stereophile's Hi Fi 96 Specialty Audio Show. See us May 30 - June 2, 1996 in the Marilyn Monroe and Herbert Hoover rooms, 4th floor.

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pation of the next Stereophile test CD: Drive-by shootings! Verbal abuse by linguistically challenged youths in surround! And, of course, that most "musical" of sounds, deceeeep THUMP! THUMP! Bass! Oh Fabulous Day!!!

What's that you say? Car audio is loaded with responsible adults whose "systems" deserve the showcase that is your magazine? Oh, please!!! The photos accompanying Wes's foray into the wonderful world of the IASCA clearly show what these people are all about: Noise, Noise.

Who among us has not silently cursed the rolling boom box that is the calling card of the "mobile-audio enthusiast," as it bombards us with bone-shaking, window-rattling, brain-cell-destroying (but oh, what imaging, eh, Wes?) noise that is totally void of musicality of any kind?

Are you that desperate to increase circulation? Are you so PC that you feel the need to provide a respectable voice for the treble-deprived? How dare you compare audiophiles with the reprobates of car audio? Throwing money at something, in this case car audio, does not an audiophile make.

Spare us this hejira into the pit of ignorance. Turn back while your clothes still fit and your hat is on properly. You can not make a silk purse out of a sow's ear. I do not care how many "household names" are participating in the goal of "accurate musical reproduction" (read: noise). These manufacturers are in business to make money. They don't care if their products are used by the end result of some mindless drug-induced nut...

I am passionate about music as well as the publications I buy that espouse it. I can proudly display your magazine on my coffee table, where it now sits (even with the "infamous" Cello ads). I will not do so if you go ahead with your intent to become mouthpieces for these ambulatory mounds of excrement.

Why are you doing this to us? How long before you change your name to "We-1c CARstereophile"? LA, did you have the final word on this?!

Car audio is not High-End, it is Rear-End!!! Just sign me...

**DISGUSTED IN SAN DIEGO**

**TOTALLY UNACCEPTABLE?**

Editor:

Would you consider an ambient noise level of 60-65dB in your listening room to be even remotely tolerable? I certainly wouldn't. Yet that's what one gets in even the quietest luxury sedans... wind noise, road noise, engine noise, all make for a totally unacceptable high-end listening environment. Totally unacceptable, JA. Really.

We don't need car stereo in Stereophile. Leave it to the magazines who cater to the baseball-cap-on-backwards set. No car stereo! Jim Maroso Chatham, IL

**CAR TUNES**

Editor:

I love the fact that a high-end publication has finally taken a serious look at car audio. This is a very fun and exciting hobby for many people, and, as I'm sure Wes found out, there is no better way to do this than to actually get one's own hands a little dirty. I think he now has the bug.

The reason I am writing is that I am amazed that Wes had a noise problem. There are usually a few easy steps with which one can find out exactly where the noise is coming from. These steps are from the "Autosound 2000 Troubleshooting Flowchart." At $5, this flowchart is a must! Autosound 2000 tech briefs are regarded by some to be invaluable when installing a sound system in a vehicle. The Autosound 2000 techbriefs tech-line — (800) 548-8200 — is a godsend.

One thing that I wondered about was the Audio Alchemy DLC preamp. The head-unit has a preamp built-in already, and adding more components than necessary is asking for trouble. Also, one of the most important measurements of a car-audio headpiece is Maximum Output Level (MOL), measured in volts. One wants as high an MOL as possible. Unfortunately, however, the car-audio industry "standard" is 500mV. This is exceedingly low and allows an induced noise voltage sometimes to be almost as great as the signal voltage! For this reason a high output voltage is a must in a quiet system. On the order of 4V or more is good. (I've seen as high as 16V.) Manufacturers like Alpine, Sony, and Kenwood have models that will do this. A low output impedance is also necessary (less than 1k ohms maximum). Check these two specs before even bothering to measure THD, S/N ratio, etc., for without a solid output, 0.001% THD will not make a difference.

Altogether I am very very very pleased that one of the biggest and best high-end home-audio magazines is taking a serious look at car audio. Thanks.

Victor Ebering
Verbr1@uic.edu
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CAR NOISE

Editor:
As a fan of your ‘zine for many a year, I couldn’t let the opportunity to contribute, in even a small way, pass me by. I, too, have a high-end car stereo and have been refining it for years. I recently found my Nakamichi TD-500 (close relative to the venerable TD-800) to be the source of the alternator whine I’d been suffering with. The symptoms were classic: background whine which corresponded to engine rpm, and which worsened considerably when lights, air-conditioning, or any other load on the battery was demanded.

I found my problem to be: The ground-stud provided on the Nak unit’s rear for both mounting and the chassis ground-point was not suitable for grounding! Sourcing ground to the unit with a separate ground wire to the negative battery post and experimenting with various ground-wire locations on the Nak case, I found there was a spot on my unit that led to no whine under any circumstances. (In my case, this was grounding to the lower right-rear corner of the case, using 16AWG with a wire-lug under a case-screw head.)

Unit disassembly had shown that the ground-wire return for the in-line IGN 12V filter (an LC network) was soldered directly to a fat ground-trace on the main printed circuit board. The case, a steel box, was formed in a way that left small “tangs” which were bent over and soldered to the same fat ground-trace along with other internal ground wires, an internal “star-grounding” system which terminated at the tangs. The ground-stud provided on the case rear measured some 2” from the nearest tang soldered to the fat ground-trace. This distance through the relatively high-impedance steel case proved too much! It was simple to prove: When I sourced the ground physically close to a tang soldered to the fat ground-trace, the whine disappeared. When I sourced the ground elsewhere on the case—whine! In short: The ground-stud on my Nak is low ground resistance but high(sil) ground impedance.

It finally all fell into place! The DC in a modern car is DC plus an AC component: The combination of battery resistance (!), the rather ugly charge-currents from the rectified AC from the alternator, high-energy ignition systems, even interior-lighting dimmer circuits, conspire to “load-up” the DC with AC. It is quite revealing to monitor the battery with an oscilloscope; when the car is running, the wave-shapes on the DC are nasty…and get worse as you turn on accessories.

The audio circuitry within my Nak is quite good — Wes’s is no doubt better, but it needs pure DC with little AC, and to this end employs regulation. Even regulation alone is not enough — it is preceded by the DC line filter. All this filtering is effective, but to work well it must have a low-impedance path back to the battery.

Glad to see Wes found the fun in sound again. It’s something I’d been missing, too.

Predictions: Wes will get a center-channel speaker. It can be fed with a mono signal, and its level must be independently adjustable…you may be surprised how much your imaging will be improved with even very low levels of center-fill.

Perhaps I can now justify buying that $75 1 Farad/25V capacitor for the last bit of amplifier oomph! Yahoo!

BRAD TEAGUE
San Francisco, CA

CAR FUN

Editor:
Greetings, y’all, from the South! Okay, okay, I know — enough with the redneck skewing, get on with what yer gonna say! Well, as this is my first letter to your exquisite publication, I thought I might give it a little flavor, as you might put it. But it didn’t work, so I’ll just quit now before I get buried too deep.

After having been a subscriber for almost two years now, I thought it was about time for me to waste some ink and trees ranting and raving about some mindless topic. But which one should I choose? There are so many out there! SE amps, HDCD, Radio Shack CD players, Armor All—all seem to bring out the aneurisms and orgasms in all of us, at least to a degree. Then I received my January ’96 and, lo and be-hooood… on p.53, there, staring me in the face is the first article I have ever seen pertaining to the “dark realms of car audio!" "Noooooo!" I found myself screaming, as if the apocalypse had finally come.

I must say this: Being only 19 and a newcomer to the high-fidelity3 arena, I have had some, but not much, experience in the car audio territory of Planet Audio/Nirvana. Unfortunately, most of this has been with the Megabass (no reference to any company that happens to rhyme with Zony) lowered pickups.

3 Even I prefer the above-used term to the much abused and badly deemed “high-end" label that has given us all a bad rap.
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that can kill small furry creatures at 100 paces. However, I must augment WP’s remarks, in which he, at the IASCA Finals, “consistently heard astoundingly good sound.” The finest in mobile audio is actually much better than I believe most audiophiles out there think it is, simply because all most of us ever see are the above-mentioned “Terminators”! Of course, mobile has its limits, as does home audio and as do the recording engineers who make all of our wonderful discs, both aluminum and lacquer. But, as our branch’s limits of realism are increasing every day, so are theirs, and in a damn good way if I do say so myself!

Why, you ask, do I then bring all of this up? Well, actually, several reasons come across my balding head. First of all, I know that within three or four months I’m going to open up my Stereophile to the “Letters” section and there will be 10 or so total blowhards that are gonna waste 30 pages of space “bitchin’ & whinin’” about WP wanting to write about car audio! So for them, this is to explain the other side and perhaps enlighten you to the progress that has been made.

Next, I’d like to give kudos to WP for coming up with the idea for his new column, and to JA for publishing it! Way-do-GO! If WP is going to take this seriously, then we’ve gotta convince the competitors and manufacturers of several things:

First: We must dispense with the in-dash head-unit playing CDs, serving as a preamp and tuning-in stations. Separates may take up more space, but I betcha they’d sound worlds better!

I can tell you right now that there are blatantly audible differences between listening to a unit at, say, -40dBFS and listening to it at -20dBFS. And no, it’s not due to it being louder, thank you very much! My theory states that it’s simply the minuscule power supply within the unit simply running out of juice. It can’t sustain powering the preamplifier section, CD motor, D/A section, and display all at the same time without making severe power restrictions in some areas.

Second: Make them aware that cables can make a difference. (You in the back there — SHADDAP! I think they can, so bite me!)

Third: Make them aware that the preamplifier is the heart of a system, and that we need to get rid of the idea of preamp-EQ. If you need EQ (which most don’t but have one anyway . . .), get one and leave it out of the preamplifier stage! Ach-WO! Dieser Mann ist so BLOT!

Fourth: The most important improvement that we as audiophiles could bring about would be the widespread introduction of the tube (I think by now you can ID my sonic preferences)! Yes, I know that the auto-environment is not the optimum home for a valve, but if the competitors realized the possible levels of fidelity reached by the use of them, one would think they’d be ready to jump on ye ol’ bandwagon o’ tube-ophiles! In fact, I was reading “Sam’s Space” this month and thought, “Wouldn’t the car be the best place to really introduce the SE amp?”

Now first of all, for my own listening tastes and system/room interaction, I would not benefit from the use of such an amplifier; the limited bass power and inability to play loudly enough with my 87dB-sensitivity Mirage M-3s would probably make them walk over to the couch and slap me upside der Kopf! However, the immense transfer function that occurs inside a car would make the amplifier’s overall lack of power and extension (hopefully!) a moot point. Explanation: The transfer-function can naturally extend a woofer’s response into the low/mid-20s. And considering that many competitors are turning to the use of very-high-sensitivity compression horn drivers (on the order of 107–110dB!), the amp would have a relatively easy load to drive, assuming that impedance and phase-angle varies little with frequency. 20W a side? Hell, I’d try it. A little food for thought.

Finally, perhaps the most important incentive to explore mobile audio is that there is something I have noticed at the few competitions I have attended. The contestants are all having fun! Yes, they actually are! Something that seems to be missing in home audio. I have never seen a competitor come down with a nasty case of Audiophilia Nervosa, wondering if little wooden blocks will give him a slightly improvement in soundstaging, or hanging bags of . . . something over his cables and pointing toward the great planet of Maximum SPL or anything of that nature. They are having fun, enjoying the music, and not worrying if the engineer placed his mikes too closely to the piano in the back of the hall!

Try it, people. It just might save you that fifth heart attack. Thanks for yer time.

Michael Nazworth
Bogart, GA
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For the NHT dealer nearest you: (U.S.) call 1-800-NHT-9993; (Canada) Artech Electronics Ltd. (514) 631-6448
US: Wes Phillips

Dealers promoting manufacturer and designer seminars should fax (do not call) Wes Phillips the when, where, and who, at (505) 983-6327, at least eight weeks before the month of the event — if you’re putting on something in May 1996, you should get the information to Wes no later than March 1. Mark the fax over sheet “For the attention of Wes Phillips — Dealer Bulletin Board.” Promoters of hi-fi shows and audio societies promoting manufacturer visits should also fax Wes the details as soon as possible.

Arizona: Esoteric Audio (4120 N. Marshall Way, Scottsdale) will host Brad O'Toole of Transparent Cable on April 19, 7-8:30pm, for an A/B demonstration of Transparent cables with and without their networks. Troy Kosovitch of Wilson Audio Specialties will also demonstrate the WITT and WATT/Puppy 5.1 loudspeaker systems. Seating is limited; call (602) 946-8128 for reservations.

California: Music Lover's Audio (1510 Walnut St., Berkeley) will play host to Alan Shaw, Managing Director of Harbeth Acoustics, on Thursday April 4. Mr. Shaw will discuss the computer-aided design techniques that resulted in the Compact 7 and HL-33ES loudspeakers. Benz Micro cartridges, Graham tonearms, and Shakti Audio Innovations products will also be demonstrated. Call (510) 841-7166 to reserve a space.

Affordable Audio (9605 Venice Blvd., Culver City) will host a mastering seminar on April 27, featuring recording engineer Len Horowitz of HRS Records. He will demonstrate and lecture on the mastering process, using his customized Scully lathe. Admission is free, but seating is limited. Call (310) 558-0716 for reservations. Times: 3pm and 6pm.

Canada, Quebec: On Thursday May 2, Audioville (972 St. Laurent, Montreal) will host a seminar with Doug Blackwell of Transparent Cable. Cable needs for music and Home Theater systems will be discussed, and Blackwell will compare Transparent's cables with and without their networks. Time: 6-7:30pm. Call (514) 861-8050 for reservations.

Filtronique (9343 Lajeunesse, Montreal) will host Transparent Cable's Doug Blackwell on Friday May 3, for a discussion of audio cable and a demonstration of Transparent's networks, via A/B testing. Time: 7-8:30pm. Call (514) 389-1377 for reservations.

Canada, Ontario: On Tuesday April 30, Distinctive Audio (903 Carling St., Ottawa) will host a seminar featuring Doug Blackwell of Transparent Cable. Audio cables will be the featured topic, and Transparent's network philosophy will be discussed. Time: 6-7:30pm. Call (613) 722-6902 for reservations.

Audio Excellence (8763 Bayview Ave., Toronto) will facilitate a seminar on Wednesday May 1, conducted by Transparent Cable's Doug Blackwell. Audio-video and hi-fi cables will be discussed, and there will be A/B comparisons of cables that do and do not utilize Transparent's networks. Time: 6-7:30pm. Call (905) 881-7109 for reservations.

Montana: Thirsty Ear Hi Fi (9 East Main St, Bozeman) will hold a seminar with Brad O'Toole of Transparent Cable on April 18, 7-8:30pm. Cable requirements for Home Theater and music-only systems will be discussed, and Transparent's cables will be demonstrated with and without their networks. Seating is limited; call (405) 586-8578 for a reservation.

New Mexico: Sound Consultant (9517 Avenida del Oso NE, Albuquerque) will host Phil Bamberg on Saturday May 11 at 7pm. Mr. Bamberg will demonstrate the Bamberg Series 3 and Series 4 loudspeakers. Seating is limited; call (505) 821-9626 for details and reservations.

New York: Alan Shaw of Harbeth Acoustics will be a featured guest at an open house at Audio Arts (285 W. Broadway, Manhattan) on Friday March 29 and Saturday March 30. Mr. Shaw will discuss how Harbeth Acoustic's products exemplify their sophisticated design and manufacturing backgrounds. Garth Leerer of Musical Surroundings will be on hand to discuss Basis turntables, Benz Micro cartridges, Graham tonearms, Aesthetix pre-amplifiers, Shakti Audio Innovations, and other new products. Call (212) 431-9200 for details.

Select Sound (6314 Northern Blvd., Rt. 25A, East Norwich at Oyster Bay) will host their Spring Manufacturers' Seminar on Saturday April 27, 11am-6pm. Music, Home Theater, and custom multroom systems will be demonstrated, including the latest Dolby AC-3 surround-sound components. On hand to answer questions will be designers and representatives from ADA, B&W, Krell, Meridian, Naim, Pioneer Elite, Rotel, Runco, Stewart, Solid, Target, Totem, Velodyne, WireWorld, and others. For more information, call (516) 624-2124.

The Western New York Audio Society will sponsor its annual swap meet on Sunday April 14th from 10am to 5pm at the Stephen Sikora American Legion Post #1322 (950 Payne Ave., North Tonawanda, NY). Many local and out-of-state dealers and manufacturers will attend.

Ohio: Paragon Sight & Sound (5450 Monroe St., Toledo) will sponsor a seminar featuring Stephen Hill, President of Straight Wire, on Tuesday April 30, from 6:30pm to 9pm. Topics will include new cable technologies and affordable cable alternatives. Space is limited; call (800) 873-6873 for reservations.

Oregon: The Audio Gallery (16318 SW Bryant Rd., Lake Oswego) will host an evening of discussion, music, and dessert with Lucien Pichette of Avalon Acoustics on Thursday April 11.
at 7pm. This will be the Pacific Northwest premier for the Avalon Radian HIC, shown as part of the Avalon/Spectral/MIT 2C3D system, incorporating the Spectral/MIT cables and the Spectral DMA 150 amplifier. Seating is limited; call (503) 699-8888 for reservations.

Pennsylvania: The Philadelphia Single-Ended All-Star Symposium will be held Sunday March 24 at the Adams Mark Hotel—(215) 581-5000—starting at 1:00pm. The event will feature the best and the brightest single-ended designers, including Dennis Had of Cary Audio, John Stroncek of Bel Canto, and Nori Komuro of Komuro Audio Labs. Major distributors will also be there with their amplifiers: Herb Reichert with Audio Note, Victor Goldstein with VAIC, and Harvey Rosenberg with Nobu Shishido's spectacular WAVAC amplifiers. Also featured will be Ken Stevens with the latest Convergent Audio Technology Signature, John Kulikula and David Golstein with Timbre Technology's digital products, and Frank and Margie Hale with Swans Speakers' high-sensitivity Allure speaker. The event is open to the public and sponsored by the Philadelphia Audio Society, Tel: (610) 265-5700.

Virginia: Gifted Listener (5720 Pickwick Rd., Centreville) announces a musical evening with Michel Reverde of Goldmund on Thursday March 21 (this is the event that was snowed out last January). Refreshments at 7:00pm, presentation at 7:45. Reservations required; call (703) 818-8000.

US: John Atkinson
Surprise DVD news in February (when you consider the fevered, bullish excitement among hardware manufacturers at the recent Las Vegas CES) was the announcement that Disney and Blockbuster were going to sit out the fall '96 launch of the new video medium. Instead, both companies said that they would wait six months to a year to see what consumer acceptance would be. One highly promoted feature of DVD that might turn out to be a bug is its universal video format, meaning that the same discs could be sold in both NTSC and PAL countries. Far from seeing this single inventory as a benefit, Hollywood is scared to death because it blows apart the currently comfortable marketing scheme for movies. Studios can schedule different release dates for the two continents because US-released tapes and discs won't play in Europe. The theater release of a hit film in Europe can thus occur later than the US video release. Some are even proposing that DVD players incorporate a chip to prevent US DVD releases playing Europe, and vice versa. In addition, while the hardware companies at CES were confident that consumers would be able to buy DVD discs and players by Christmas '96 at the latest, there are still major copyright and piracy issues to be resolved.

US: Robert Harley

Audiophile Audition, the national radio program about music and high-quality sound reproduction, is celebrating its eleventh anniversary this month. The weekly program, carried by more than 125 public radio and concert music stations across the country, features classical music with a somewhat adventurous repertoire and an emphasis on good sonics. Audiophile Audition also includes audiophile-oriented discussions, including tips on getting the most enjoyment from your system, special programs dedicated to specific audio topics (surround-sound,
audiophile LPs, best-of-the-year CDs, for examples), and interviews with leaders in the audio and music fields. Upcoming interview guests include Mark Levinson, Mike Moffat, Doug Sax, George Martin, Floyd Toole, John Eargle, Dr. Bruce Edgar, and yours truly. The show’s twice-yearly, all-binaural broadcast for headphone listeners is another popular feature.

Host and producer John Sunier is the author of three books on audio and music, and holds degrees in both music and broadcasting. *Audiophile Audition* is the only national radio show making a weekly effort to raise public awareness of high-quality music reproduction. The hour-long program is engineered to a high standard: programs are mastered on Super-Bit-Mapped DAT, and uplinked directly from the digital master to the satellite.

Because of generous funding from audio companies and record labels (the 1996 first-quarter underwriters are Polk Audio and Digital Theater Systems), the program is provided to stations at no charge. To find out if a station in your listening area carries *Audiophile Audition*, e-mail Sunear@aol.com, or browse the show’s web site at http://www.btown.com.

Those of us who prefer paper and pencil can write to P.O. Box 1621, Ross, CA 94957. You can also request a copy of the Station List, which includes quarterly playlists, the best CDs of the year list, and a program schedule.

**US: Mortimer H. Frank**

The death of John Pfeiffer (1920–1996) this past February at the age of 75 marked the end of an era in the classical division of RCA. When Jack (as he was known to all who worked with him) came to the company in 1949, it was as a design engineer. But musical training led to his moving into the A&R aspect of the business. Richard Moltz, who recognized Jack’s potential as a producer, may not have foreseen how the career he helped catalyze would lead to Jack’s working closely with such extraordinary artists as Toscanini, Heifetz, Horowitz, Rubinstein, Landowska, Sokowski, and Reiner, to name but some.

By the time I had my first professional contact with him, Jack was a revered elder statesman of the industry, a throwback to a period when people went into the record business primarily because of their love for music and for recordings. Three years after our first meeting, I attended his 70th-birthday party at RCA’s offices. Most of those present expected him to announce retirement plans. Instead, Jack quoted Jascha Heifetz: “He who rests, rots.”

Given such an attitude, it seems fitting that Jack died suddenly while at work in his RCA office. There is a dignity in such a death that befits the dignity of the man himself. In projects for which he engaged me, he acted much more the wise, gentle counselor than the stern overseer. Someone else might have been, and even when he rejected some of my ideas, it was with a grace that always made me feel they had worth. Indeed, among the many people I know who worked with him, I never met one who failed to like the man or to admire his consummate professionalism. He will be missed.

**US: Wes Phillips**

Readers of *Stereophile* and *The Tracking Angle* have inundated Allsop with phone calls concerning the Orbitrac Record Cleaning System, which the firm has discontinued. While the company has not been persuaded to reissue the Orbitrac, they have found a small stash located in Ireland. The “Irish Orbitrac” is the executive model 58000, which comes...
One of the best tools we know of for optimally setting up loudspeakers in a room is Sitting Duck Software's The Listening Room. Reviewed by TJN in December 1990, this program for PCs (DOS) and Macs allows an audiophile to move simulated loudspeakers around a simulation of his or her room (in three dimensions) to find the position that gives optimal performance below 200Hz or so.

One of the authors of The Listening Room, Bill Fitzpatrick, recently announced a new Windows program that builds on the earlier program’s strengths: Visual Ears runs under Windows 3.1 and Windows 95 and offers comprehensive acoustic modeling, including rooms with sloped or cathedral ceilings (but not L-shaped listening spaces). It also offers a wide choice of loudspeaker types (other than panels), including satellite/subwoofer systems, and takes the crossover frequencies into consideration. We plan on publishing a review; in the meantime, preliminary experience suggests a strong recommendation.

Visual Ears costs $89.50 plus $3 S&H ($6 outside the US) — checks or money orders only — and can be ordered from KB Acoustics, P.O. Box 50206, Eugene, OR 97405. Tel: (541) 935-7022.

**US: John Atkinson**

"Hi-Fi '96: the Home Theater & Specialty Audio Show," promoted by Stereophile and the Stereophile Guide to Home Theater in conjunction with the Academy for the Advancement of High-
Our Brand Is Playing In These Fine Houses:

AZ - Jerry's Audio/Video: Phoenix, Tucson
CO - Listen Up: Denver, Boulder, Colorado Springs
CT - Robert Electronics: New London
DE - Sound Studio: Newark, Wilmington
ID - Phase 4 Stereo: Idaho Falls, Rocello
IL - Columbia Audio/Video: Highland Park, Rockford, Arlington Heights, Audio Consultants: Evanston, Libertyville, Hinsdale, Audio/Video: Glenn Poor's Audio/Video: Champaign
IN - Sound Productions: Carmel
IA - Audio Room: Marion, Dubuque, Pitfalls Electronics: Sioux City
KS - Audi Mart: Leawood • Kief's Records & Stereo Supply: Lawrence
LA - Audio Video Center: Shreveport
ME - Harbor Audio Video, Camden
MD - Gramaphone: Lutherville, Ellicott City
MA - Nantucket Sound: Hyannis
MI - Stereo Show: Traverse City, Saginaw, Lansing, Okemos, Ann Arbor
Stereo Center: Flint • Classic Stereo: Grand Rapids, Kalamazoo
MT - Video Sat & Sound: Billings • Stereo Plus: Missoula
NE - Stereo West: Omaha, Lincoln
NY - The Upper Ear: Las Vegas
NJ - Harvey Electronics: Paramus • Sight & Sound: Bernardsville • Hal's Audio Video: Tinton
NY - High Electronics: New York, White Plains, Westbury • Stereo Chamber: Orchard Park
OH - Audi Craft: Westlake, Cleveland, Akron, Mayfield Hills • Stereo Lab, Columbus, Cincinnati
OK - Audio Dimensions: Oklahoma City
OR - Cheverton, Portland
TN - Sound Center: Johnson City, Memphis
TX - High Fidelity, Inc.: Austin • Bjorn's Stereo: San Antonio • Hi-Fidelity: Lubbock • Home Entertainment: Houston, Plano, Sugarland, Dallas • Brock Audio: Beaumont • Bunkley Sound: Abilene • Audio Tech: Waco, Temple, Stereo Video Center: Longview, Marshall, Tyler • Don's Hi Fidelity: Amarillo
UT - Audio Works: Salt Lake City
WA - Hoppins Hi Fi, Spokane
WI - Flamsteed's Audio Video Inc., Brookfield • Sound World: Appleton, Green Bay
VA - Sound Approach: Newport News
VT - Creative Contact, Arelas Acoustics Ltd., (604) 529-8965

End Audio, is on track to be our biggest Show yet. Taking place at New York's Waldorf-Astoria Hotel from May 31 to June 2, with May 29-30 reserved for trade visitors, it will have more than 240 brands being demonstrated by over 120 exhibitors. Live music will run throughout the Show, including concerts by pianists David Chesky, Lincoln Mayorga, and Robert Silverman (whose Liszt Piano Sonata recording for Stereophile makes its debut at HI-FI '96), violinist Arturo Delmoni, blues singer Doug MacLeod, and the Lynn Artille Trio.

By contrast, the CEMA-organized "CES Digital Destination," scheduled to be held in Orlando, Florida May 23-25, had just 39 exhibitors booked by mid-February, including publishers and service companies, while the associated CES Specialty Audio & Home Theater listed 26 exhibitors. CEMA was confident their Show had reached critical mass, but only a few high-end companies were firmly booked to attend, including Krell, McCormack, Conrad-Johnson, Parasound, and Thiel. When you consider the huge success of CEMA's Winter CES (reported on in full elsewhere in this issue), it's hard to see that the Orlando Show will take place.

In this humble reporter's opinion, the US needs just one all-categories trade Consumer Electronics Show, and that, selected by a process of Darwinian competition, is the Las Vegas event.

US: Wes Phillips
CEDIA, the Custom Electronics Design and Installation Association, has established a home page on the World Wide Web: http://www.cedia.org/cedia.

"The CEDIA Web page was designed to give our members an informational link to the Association at all times," said Keith Rich, president of CEDIA. The Web page contains the goals and facts of the Association, a list of the CEDIA Executive Committee and Board of Directors, Council and Committee Chairpersons, and Headquarters staff members. Also available is a complete directory of CEDIA members listed by state and discipline, weekly updates on Association and committee activities, EXPO '96 information, and the latest information and trends in custom installation-related technology. Links to member manufacturers' Web sites are planned.

Z-Systems Audio Engineering has a new World Wide Web site at: http://www.z-sys.com. The site will provide product information on the firm's line of digital audio interface and signal processing equipment, introduce new products, and spotlight dealers and end-users.

US: John Atkinson
Some financial news as reported in the industry bible Audio Week: budget specialist Cambridge SoundWorks had sales of $22.3 million in the six months up to the end of 1995; Harman International sales in the same period were just over $649 million; while Polk Audio sales for the three final quarters of 1995 were worth $34.1 million. In Europe, B&O sales from May through November were worth $230.5 million, while Grundig announced a net loss for 1995 of $410 million. In Japan, Kenwood plans a cut in its personnel from 3050 to 2600 by the end of 1998, Denon is using early retirement to downsize from 1536 to 1400 by this month, and Pioneer is planning a 10% reduction in its workforce by March '97.

US: Wes Phillips

VAC and Tubes By Design have moved. Their new address is: VAC/ Tubes By Design, 807 Bacon St., Durham, NC 27703. Tel: (919) 596-1107. Fax: (919) 596-2037.

Chadwick Modifications, known for its enhancements to turntables, has moved. Its new address: Chadwick Modifications, 497 Huntington Ave., Suite 57, Boston, MA 02115. Tel: (617) 445-9631.

US: John Atkinson
After almost nine years of excellent work, Stereophile's Music Editor, Richard Lehrner, has decided to put aside his copy of Groe's and change career direction. Accordingly, we are looking for a full-time Music Editor to oversee the magazine's record-review and music-feature sections. Extensive knowledge of all kinds of music and the recorded repertory essential; editing and magazine experience an advantage. Those interested should send their résumés to me — do not call — at Stereophile, PO. Box 5229, Santa Fe, NM 87502. Please mark envelopes "Music Editor."
DVD Is Where It's At.
If you've been reading about DVD, you've seen a lot of references to Toshiba. That's no coincidence. Toshiba led the way in developing DVD technology. Technology that includes a component video signal, which means a picture better than laser disc, and three times better than VHS. Six discrete channels of Dolby® AC-3® digital surround sound and up to eight languages. Multiple aspect ratios (16:9, letterbox, pan and scan). And the versatility of multiple subtitles, camera angles and rating edits. All on one disc. So, if you enjoy being on the leading edge of home entertainment technology, you know that DVD is where it's at.

When you're ready to experience the brilliant picture and the extraordinary sound that DVD delivers, won't it make sense to get the technology from its source? Toshiba is the source of DVD technology. And DVD is the future.
Beyond Description
“If the roller coaster falls off its track, riders will wind up in the Keno lounge at the Sahara.”

My Las Vegas cabbie was talking about the 100-storey-high Stratosphere Tower, set to open later this year almost kitty-corner across Las Vegas Boulevard from the Sahara Hotel.

Atop the podlike structure will be an observation deck, a restaurant, and a wedding chapel. But hey, this is Vegas, the home of Can You Top This? There’s got to be more. So there will also be a roller coaster winding its way around the top of the tower.

Can you top that?

Of course. King Kong or his look-alike will ascend the tower starting at its base — illuminated by spotlights, no doubt. But how to make Kong pay?

Never fear. For an as-yet-unspecified admission price, you will be able to ride, caged, inside the gorilla. Isn’t it wonderful? The gorilla will be loose, the people will be caged. Next year, if things get slow at the high-end exhibits at the Sahara Hotel, I can walk across the street and climb the tower with Kong or take a spin on the coaster.

What’s that?

They’re tearing down the Sahara Bi-Level Complex, that rambling, seedy, 1950s-motel-like structure which has housed the High End at the Winter Consumer Electronic Show for lo, more than a dozen years?

That’s right. No more bi-level. No more High End at the Sahara. Next year, the exhibits will be over at the Alexis Park Hotel. Alexis? Sounds about as much fun as a Courtyard by Marriott — which isn’t a bad place to stay in Vegas, by the way. No casino. No slots.

**WILL THE REAL SEYMOUR BUTTS PLEASE STAND UP?**

Like a lot of high-end hangers-on, I’ve grown fond of the Sahara over the years — so many memories. Such a sinister place. You trample through the lobby, or better yet, through the casino, and you know that this is a joint frequented by real gamblers. I’m told that the place has some of the most experienced blackjack dealers in town. True, the Sahara looks like it hasn’t had a face lift since it was built, but that’s part of its charm. It’s Old Vegas, if there is such a thing.

**Item: The Sahara Coffee Shop.** As you may know, the High End has shared the Sahara for many years with porn video exhibitors. I was waiting for a table with a dealer friend. We stood behind half a dozen tattooed gentlemen — no tattooed ladies, alas.

These guys were tattooed chest, arms, and legs. Faces, too. I couldn’t help admiring their ingenuity. They had turned themselves into freaks and then earned a living from it. America truly is the land of opportunity.

**SECOND-GENERATION DVD PLAYERS WILL ALMOST CERTAINLY OFFER MORE FOR LESS.**

I don’t think we’ll see any tattooed gentlemen over at the Alexis. And I’m sure I won’t encounter Mr. Seymour Butts and Ms. Wendy Whoppers in the elevator, as I did at the Sahara. Think they were talking about sex? Nah, they were talking about lawyers. I didn’t really catch the gist. The door opened and Mr. Butts butted out. But it seems there may be more than one Mr. Seymour Butts. Will the real Seymour Butts please stand up?

Enough. This is serious business. And for the first time in years, I didn’t get to tour the porn video exhibits at the Sahara. Not that I didn’t try — but by the time I learned that all the big porn video stars were on parade, as it were, security guards had sealed off that part of the hotel. The room was already jammed past capacity.

All this local color will be missing — along with the tourists inside the gorilla cage — when the Winter CES moves to the Alexis Hotel. What will we do for entertainment?

**DRIVEN TO DRINK**

I suppose there will always be the Pioneer press conference. Several years ago I reported on one such press conference in which Pioneer introduced the now-forgotten LIFE, which stood for Laser Interactive Family Entertainment — video games for kids priced beyond the reach of most adults. I had no opportunity to ask the good folks from Pioneer, but from what I didn’t hear over at Drink, LIFE appears to be dead.

Drink is the name of a trendy Vegas disco — trendy at night, anyway, when hundreds of heaving bodies turn the place into what I can only imagine is akin to Dante’s Inferno. What a strange place to hold a press conference! But hey, a free Drink is a free drink and there was food, too. So I was driven to Drink … in a taxi cab.

I shall draw a veil over Pioneer’s product presentation — the sound was unintelligible, while for video, Pioneer used what appeared to be Drink’s house array of Sony video monitors up on the wall, which assured that much of the content was lost in the cracks between the screens.

I think Pioneer had something important to say, I think they were trying to convey that Pioneer has been a pioneer in optical video technology, and that the company is well positioned to advance the cause of DVD, which seems set to render laserdisc obsolete. (No one I talked with sees a future for laserdisc after DVD gets established.)

Fortunately, Pioneer products are considerably better than their press con-
Elevate your system to heavenly levels with Straight Wire

We offer over 40 models of cable to meet the demands of the most discerning audiophile as well as the casual enthusiast at a price that is down-to-earth. We’ve achieved worldwide recognition for our symmetrical coaxial designs - Virtuoso, Maestro II and Rhapsody II.

Straight Wire now offers our helical, bi/tri wireable speaker cables with unique foamed hybrid TPR insulation. While most companies buy pre-mixed insulations, we blend our own recipe for this series of cables - Duet, Octave, Sextet and Quartet.

The difference between buying a box of cake mix versus making a cake from scratch is acceptable to some...

...probably the same people who are satisfied living on cloud nine.
ferences. Of special interest is the fact that Pioneer will have at least one model of player that accepts both laserdiscs and digital video discs — something to keep in mind if, like me, you have a large laserdisc library, but expect to switch over to DVD.

EARLY ADOPTERS
I'm not sure I'd become an "early adopter" of DVD. Aren't you glad you didn't become an early adopter of DCC or MiniDisc? Or Laser Interactive Family Entertainment? The first-generation DVD players will likely feature street prices of around $400 to $500. Second-generation players will almost certainly offer more for less. More features, better performance, fewer bugs. Software will also be limited at first, even compared to laserdisc.

On the other hand, I do expect DVD to succeed, unlike DCC or MiniDisc. DVD has to succeed because of computer CD-ROM applications, even if people do not run out and buy a DVD player for their video systems this fall. This might be a good time to lighten up on new laserdisc purchases. And it might also be a good time to slow down your purchasing of CDs.

Why? Because by the time of next year's Winter CES, standards may be set for an audio-only version of the new disc, to be called high-density CD, or whatever. CDs as we now know them will likely be on the way out by the turn of the century — ah, millennium. So why load up now on "perfect sound forever" CDs unless you absolutely have to have them?

For the moment, your future may be better spent with the past. LPs. Tubes. I can think of plenty of good ways to spend your money. In fact, I saw quite a few at CES.

ELVIS LIVES!
You can now buy new Marantz tube gear again!

Mr. Ralph Cervantes, Vice President and General Manager of Marantz America, and Mr. David Birch-Jones, Marketing Manager, along with Mr. Kevin Hayes, of Valve Amplification Company, announced reissues of the Marantz Model 7 preamplifier, Model 8B stereo amplifier, and Model 9 mono amp, retailing at $3800, $3800, and $8400 a pair, respectively.

These will be manufactured by VAC, which has relocated its factory from Sarasota, FL to Durham, NC to manufacture the units, along with the various models in the VAC line. No, we couldn't listen, but the reissues looked great. Like the originals, all the wiring will be point-to-point, no circuit boards. And the idea is to keep these units in production for a while — they will not be "limited editions." Until, of course, production stops.

The original Marantz 8B and 9 are among the finest-sounding power amps ever made. And also among the most reliable. Saul Marantz and Sid Smith believed in operating tubes conservatively rather than at or beyond their specified voltage ratings. Result? Put good tubes in and they should last for years.

Astonishing! The metalwork of the reissues will be made by the original chassis vendor. The resistors and capacitors will be the same types and values as the originals, including multi-section "can" capacitors custom-made for Marantz by the original supplier.

Instead of drooping on about all this, Mr. Birch-Jones allowed himself to be interrupted mid-course by the arrival of an Elvis Presley imitator. The whole press conference was pulled off to perfection, and my gut feeling, especially with Kevin Hayes involved, is that the reissues will be, too. Products should be available within a few months.

ARE THEY LAUGHING NOW?
Years ago, when Mr. Birch-Jones was working for a certain large Japanese company, he asked me what his employer could do to establish greater high-end credibility.

"Manufacture tubed gear," I exclaimed.

"I tried telling them that, but they laughed," replied Mr. Birch-Jones.

The Marantz press conference set an upbeat tone that, for me, lasted throughout the entire show. Over at the Sahara, where most of the high-end exhibits held sway, I haven't heard such good sound in years. A lot of the gear was tubed — natch.

And get this. There was practically no Home Theater in sight over at the Sahara. It was a Home Theater desert! Could it be that many audiophiles look at a screen at work all day and don't want to look at a tube when they come home? A picture tube, that is.

WHERE TO START WITH THE SAHARA?
I'll start where I started — with the Cary Audio Design rooms, where their $805 single-ended monoblock amps were driving a pair of ProAc Response 3.5 speakers — easily the best sound I heard at the show. The system was full-range, dynamic, harmonically right. Cary's Dennis Had saw me listening and ushered me into the side room.

There, under the Audio Electronic brandname, were a pair of $1995 single-ended monoblocks, each using a single Swetlana 811-3 output tube (which happen to be made in my wife's native city of St. Petersburg). Audio Electronic, by the way, is the sister company of Cary Audio Design, and its products will now be sold through dealers rather than via mail-order. The company used to be called Audio Electronic Supply. Dennis dropped the Supply — sounds too much like a hardware store.

The speakers in the Audio Electronic room were homebrew affairs, using focal drivers, and will not become commercially available. (As Dennis explained, the would-be manufacturer got cold feet when he discovered that people liked the speakers, which would mean he'd have to make them.) While the speakers are made of unobtainium, the amps should be available by the time this report appears in print.

The sound did not blow me away, the way the Cary 805s did with the ProAcs, but it was very good indeed. I can't wait

1 Price goes up to $2295 per pair effective May 1.
Can you handle E minor?

Destinies were formed with the strike of the bow. Joy or sorrow were transmitted by the war drum or great music. PSB loudspeakers — with lifelike tonal balance, spatial imaging, and full range capability — allow you to experience the passion of those who speak through sound.

Connect your TV, a center channel speaker and a subwoofer for sensational home-theater experiences!

PSB — A UNIQUE VOICE IN THE CROWD.

For your nearest PSB dealer call Toll Free 1-800-263-4641.
to get a pair of the amps and put them on my pair of ProAc Tablette 50 Signatures—the 12 watts per channel should be enough. By the way, one big advantage of the Svetlana 811-3 output tube is that it costs only $29, retail, to replace—a fraction of what it costs to replace a 300B output tube. The AE amp has a volume control, too—so you can hot-rod a CD player or processor straight in.

Listening to ProAc
If Cary had the best sound of the show, Modern Audio Consultants had perhaps the second-best sound with the ProAc Response 2Ses at $3200 a pair (stands necessary). Importer Richard Gerberg doesn’t go in for room tweaking. Nevertheless, the sound, with an Audio Research VT130SE stereo amplifier, was superb. Effortless. Musical. Flowing. Sweet. A stunning soundstage. While it’s true that the Response 2Ses, with stands (figure $450), will cost you almost as much as a pair of floorstanding Response 2.5s ($4500), it’s also true that the 2Ses are easier to drive. I understand that Jack English bought a pair for his wife.

Gerberg also introduced the ProAc Tablette 50 Signatures, which I already have in my listening room. (I got them two weeks before the show—sort of a sneak preview.) These speakers, too, are stunning—exquisitely made minimonitors retailing for $1700/pair plus stands. Again, designer Stewart Tyler hits the harmonics just right.

Avantgarde
I was especially interested in speakers which were sensitive enough to be driven by low-powered tube amps. Audio Note showed German-made Avantgarde Acoustic Profile Duo horn speakers—retailing for $16,000 a pair. The horns are fabricated from dyed ABS plastic—two horns per speaker, a mid/woofer from 200Hz to 2kHz and a horn tweeter from 2.4kHz on up. Powered subwoofers, included in the price, handle the frequencies below 200Hz. The two spherical horn units are mounted without a cabinet in a framework of steel tubing. The visual effect is striking. And the sound? Sorry, but the Sahara hotel room was just too small to tell. Listening up close, as I had to, the sound didn’t have space to blend. I know that these speakers are highly regarded by, among others, Gordon Rankin of Wavelength Audio. I expect to audition a pair soon, in better surroundings—maybe even my own living room. It’s good to see new horn designs being developed!

Wavac to go?
In a somewhat larger room, Wavac Audio Limited, of Japan, achieved more blended sound with a pair of JBL horn speakers made, but not generally available, in the USA. They showed a line of three single-ended amps, ranging from the Wavac 300B stereo amp, rated at 10Wpc ($12,000) to the Wavac stereo 805, with 805 power tubes, rated at 45Wpc ($45,000). These prices appear to be retail, direct from the manufacturer. There is not yet a North American distributor. Prices do not include shipping...or, presumably, customs. There are matching passive preamps, too.

My friend Harvey Rosenberg, who’s way into this stuff (and trying to get me in even deeper), tells me that Wavac’s Nobu K. Shishido is the single-ended tube guru of Japan. These are the most beautifully designed amplifiers I have ever seen. Stay tuned to this column for the first US coverage of the Wavac 300B!

Vaic Squad
Beautiful, too, are the single-ended amplifiers from Vaic Valve—that’s pronounced “vaisch,” ending in a soft c. The Vaic output tubes themselves are made in the Czech Republic, by folks formerly associated with Tesla. US importer is Fanfare International. The amps are made in Italy, which may be one reason my friend Luigi, who attended the show on behalf of another magazine, wrote diventa pazzo over the 18W VV30B single-ended triode monoblock amplifiers, which use the recently-developed proprietary V30B, Type 1 output tube (the amps are $9800 a pair).

Lou bought the amps on the spot, thus becoming the first American member of the Vaic squad. (Sorry.) Since I know Lou’s system almost as well as my own—and since Lou has volunteered to bring the Vaic amps over for a listen—I’ll get to write about these. Stay tuned for the sound. Stay tuned, too, for Lou’s wife, Anita’s, reaction when the amps arrive. There are other amps, too, in the Vaic line: the VV52B rated at 30Wpc, retailing for $13,000/pair, and an 18Wpc stereo amp, the Model 36-96, which uses a pair of V30B tubes and retails for $3800.

Electric-Chair Amps
Quadric Audio USA introduced the Model MT-35 single-ended monoblocks, which use the 845 output tube and are made in Taiwan. These retail for $4990/pair and are said to put out 28 watts per channel. The amps sounded very good at the show, both with the Swans Allure and the Brentwood Sound Labs Type 3. Most of my listening was with the Swans. A pair of these amps may have enough juice to goose some good sound out of my Quad ESL-63s. Great looking amps, too—these may be a real bargain. But note: the output tube is run at 1000 volts on the plate. “Beware of this aspect of the unit should you become a dealer,” the product literature warns. And should you become an owner, too.

The always colorful David Manley has a term for such amplifiers. He calls them “electric-chair amps.” Dangerous, I suppose, only if you’re careless. The Audio Electronuc SE-811 runs around 650V on the plate—so I guess that also qualifies as an electric chair amp. (It's
Breeding Tells

The heritage of the new Sonographe products is readily apparent. Consider these characteristic traits:

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the output tubes. You’ve got to run that kind of voltage.\(^2\)

Meanwhile, LAMM Industries of Brooklyn, whose president gives his name on his business card as Vladimir Shushurin (LAMM), showed their new 90W tube monoblock, the Model ML1. Output tubes are two Russian-made 6C33C-Bs, nice looking boobs — ah, boobs, with nipples on top. The amps were driving the beautifully finished Parsifal Loudspeaker System ($9800 for the complete stereo pair, two monitors and two woofer units). But, as they say in Russian, Bozhe moi (my God) — the amps retail for $18,690 the pair. I doubt whether many customers will come from Brighton Beach or along Ocean Parkway.

**Back to speakers**

These don’t qualify as particularly efficient, but I was struck by the excellent sound of the floorstanding Mozart loudspeakers, from Vienna Acoustics. That’s Vienna, Austria, not Vienna, Virginia. A line of four speaker models is being imported by Sumiko — ranging from the $900/pair Haydn (stands required) to the $4500 Beethoven.

For $2500/pair, the Mozarts seem to have a lot going for them, including attractive looks and a very unusual, optional, open-metal grille (to use instead of cloth). The sound was smooth, refined — what else do you expect from Vienna? — but dynamic, too. The bass packed real punch. The Mozarts, which stand just over 3' high, sound like a much larger speaker. A two-way design, the Mozarts use a 5.5” woofer and a 1” soft-dome tweeter. Sensitivity is stated as 90dB/W/m and the manufacturer recommends between 30 and 200 watts of power. Still — who knows what would happen if you put these on a single-ended amp? I hope to get a pair in soon. This was some of the best sound I heard at the show, beating out many super-expensive speakers. By the way, I see from the literature, that Haydn, Bach, Mozart, and Beethoven all have a little “TM” after their name.

Interesting, too, was the Bodhran speaker from ESP, of Bend, Oregon, retailing for $6000/pair and “designed for the single-ended amplifier market.” These attractive floorstanders have a rated efficiency of 96dB, along with a stated 8 ohm impedance, implying that they’ll probably work fine with as little as 10 or 12 watts.\(^3\)

So much stuff. I know I haven’t mentioned more than a small part of what I saw and heard. I can’t resist closing with these two products, however:

**Texas Light**

Remember The Texas Water Cable, aka the Purist Audio Design liquid-jacket speaker cable, from Jim Aud, of Clute, Texas.

Now there’s something new.

The Texas Light Cable.

All of the Purist speaker cables — the Colossus, the Proteus, and the Dominus — are now available illuminated. Prices for 3 meter pairs with the light option are $3490 for the Colossus, $5760 for the Proteus, and $14,960 for the Dominus. Interconnects are available, too.

According to Aud, these are “the first cables in the world to use light as a shield.” The whole length of the cable looks lit. How does he do it? “We built an electronic box that bathes the liquid jacket cable with a coherent, controlled light of nonvarant intensity. This blocks out all other light that would normally penetrate the cable.” \(\text{[With respect to Mr. Aud, this explanation is pure marketing BS. Light behaves in a linear manner, meaning that one beam of light cannot interact with another. Can you block out the light from one flashlight with the light from another flashlight? I rest my case. — Ed.]}\) The cable conductors are housed inside a sheath of radiant optics, which radiate the light through the liquid jacket for the entire length of the cable. With the room lights out, each cable looks like an illuminated green streak.

Weird, huh?

It looks great in the dark, though!

\(^2\) Dennis assures me that these volts are safe unless the customer deliberately takes the bottom off, turns the unit on, and places “his hand, lip, or tongue” on the DC source, and even then, “the nervous system of the body will reject the recipient of the job.” As Dennis points out, AC voltage is far more likely to kill you than is DC.

\(^3\) The manufacturer says they’ll get up and go on as little as 8 watts. Looking at the other, larger speakers in the ESP line, the Concert Grand and the Harp, I see they all have a specified sensitivity of 96dB.

And get this: It appears to work. Jim was doing demos where you could listen to the cable with the light source on or off. Dammit — I heard a difference. The sound was smoother, less edgy, images were better defined.

“You know how your system sounds better if you turn out all the lights?” Jim asked.

“Yeah.”

“There’s a reason why,” Jim replied.

You think I’m making this up, but I’m not.

However, as you might guess, I am holding on to my wallet. At $14,960, a 3m pair of illuminated Dominus cables may be “awesome” (Jim Aud’s word), but it’s also about what I paid for my Nissan Altima.

It used to be that if you were a serious audiophile, your system cost more than your car. No more. Now, if you’re a really serious audiophile, your speaker cables alone should cost more than your car.

Is it any wonder that I kept returning to Music Hall — Roy Hall’s room at the Sahara? The ‘one of ‘umble British eye-fi — Epos, Creek, and Goldring. And the ‘one of the finest single-malt Scotch whiskies. I don’t think all the stuff in Roy’s room — all the integrated amps, all the speakers, all the wire — added up to the cost of one pair of illuminated Dominus cables. Yet we always have fun listening to music in Roy’s room. Not to mention the wee dram of 26-year-old Scotch.

I told Roy about the $14,960 speaker cables. Roy shook his head.

“How many Creek amplifiers do you have to sell to make the same profit you could make on one pair of $15,000 speaker cables?”

Roy replied wistfully, “I’m in the wrong business. I am importing cables, though — Cable Talk from England. Would you like to try a pair?”

“I thought you used Nordost Flatline.”
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“That was before I started importing cables myself. Look. Do you want another drink of Scotch or don’t you? If you do, behave yourself.”

**Black Light**

Victor Tiscareno of Audio Prism is likewise amused by $15,000 speaker cables. He’s the maker of the very fine Audio Prism Debut power amplifier, which I have been very remiss about reviewing. You may know him better as the man who developed the CD Stoplight, the green marking pen for treating the edges of CDs, making them more immune to scattered laser light.

That was six years ago. Now he’s invented a lightweight CD mat, called the CD Blacklight, expected to retail for between $30 and $50. Victor wants you to know that it is not your usual CD mat — which I can verify.

The CD Blacklight provides mechanical damping, which all mats do. It also destaticizes the disc because it has a framework with a conductive carbon ink material. Static drains from the disc to the metal spindle. Aside from the framework, this lightweight mat is made of an opaque, green-colored vinyl-like material (Victor won’t say what it is).

I heard a prototype of the mat at the show. As I write, the final version is not quite set, which is one reason the price isn’t set, either. Does the mat “work”? Yes, and if my ears weren’t totally shot after four days at the show, the mat works in a big way. I did not have to strain to hear the improvement. Improved definition, detail, dynamics, a more analog-like soundstage. To tell you the truth, I was dumbfounded and begged Victor to give me a mat on the spot. But this was a prototype, so I still don’t have one.

Incidentally, this mat — which Victor expects to have in quantity by the time of HI-FI ’96— is “cumulative” with other CD treatments, according to Victor. You can still use CD Stoplight, polish your discs, use the Bedini Ultra Clarifier, whatever. Just use the mat, too.

Because the mat is lightweight and relatively thin (how thin is not yet determined), it should work with most players. This may be one of the best CD tweaks yet. And there are two great things about the mat. First, as a tweak, it’s reversible. If you don’t like the way it changes the sound, just remove the mat. And second, you only have to buy it once.

**Blizzard of ’96**

Three days into the show, I got the news that the Blizzard of ’96 was bearing down on the East Coast. Fortunately, I had the presence of mind to call my airline early and re-book a flight for Wednesday (the show ended on Monday). This left me with an extra day in Vegas, after the show, with nothing to do.

Fortunately, there were others in my situation, including Roy Hall. Together with John Adams of Community Audio in Chestnut Hill, PA, we drove to Hoover Dam, which is always a hoot. On the way to the dam, we stopped at Lake Mead.

Roy wanted to walk a little through the marina, and it was such a beautiful day, why not? We looked down from the pier into the water of the manmade lake, where hundreds of fish—largemouth bass? — were begging for food.

“I bet I could catch one of those bugs with my bare hands,” Roy said, with a certain bravo.

“What the hell are you going to do with it if you catch it?”

“Cook it over an open fire. I was a Boy Scout.”

“In Scotland?”

“Sure. It’s not Russia.”

“They had Young Pioneers there. My wife was a member.”

Roy bent over and put his hands into the water. Suddenly, I heard a plop. At first, I thought that one of the fish had given Roy a nasty bite on the hand. But no — the plop was Roy’s cellular phone falling from its precarious belt clip into the drink.

“Damn,” said Roy.

“Water’s too deep to go diving after it. You can hardly see the bottom.”

“Well, I’ll have to get me a new cellular phone.”

“Look. I’ll tell people about your loss in my column. They’ll have sympathy for you. Dealers will call and order extra Creeks. You’ll sell more Hunt EDA record brushes and Ringmat mats.”

“Oh, shut up!” said Roy, in his inimitable Glasgow brogue.

“No, really, I will. If every vinyl lover in America runs out and buys a Ringmat, for instance, you’ll make more than pay for your lost cellular phone.”

“You’re not going to put this in your column. You’re not... “Are you?”

---

4 I know what Victor means about tweaks being cumulative. The Krell KPS-200 CD player bathes the CD in light from an array of green diodes. You wouldn’t think the CD Stoplight would work further improvement. Wrong!
Sparks to move the heart. Introducing the new line up of power amplifiers from Sonic Frontiers - headed by the Power 3 Mono Amplifier. Through progressive and unique circuitry, these amplifiers bring tube audio amplification performance to a new and higher level.

Resolution, the reproduction of subtle nuances that make the musical images believable and lifelike. The Power 3 excels in this area. Through careful parts selection, selections made through proven sonic merit - with no room given to preconceived impressions or brand loyalties. Through innovative circuit techniques, a creative approach to implementing feedback in the Power 3 reflects Sonic Frontiers' desire to develop original circuit designs utilizing tubes. This approach avoids the sonic downsfalls that are associated with traditional feedback designs. With these factors contributing greatly to the resolution and detail of the Power 3, the listener will hear and feel music exposed with incredible detail and emotional impact.

Central, the Power 3 Amplifier has the ability to take hold of the music and loudspeakers they are driving. Tube amps have been accused of not delivering good low frequency performance. The lower octaves are often criticized as slow and ill-defined, coloring the vital midrange. The Power 3 renders this to be a gross misconception, bass performance excels and the midrange snaps into focus. Boasting a damping factor of greater than 50, this amplifier treads on ground never touched by tube amplifiers. Its ability to start and stop loudspeaker drivers is only rivaled by the very best solid state designs. Leading to a precision, liquidity and warmth never attained by amplifier designs of the past.

Power, rated at 220 watts off the B, 4, and 2 ohms taps, the Power 3 has the muscle to deal with very demanding loads. Speaker selection is suddenly not a crucial, limiting issue. The 6550 power tubes, operating in partial triode, remain sensitive to the loads loudspeakers demand. This new Sonic Frontiers amp responds very much like a voltage source providing greater current as load impedance drops, as less as it rises. All these benefits can be fully experienced through any of the Power 3's taps.

Extensively tested, including a 100 hour burn-in, repeated on and off cycling, and conservative component ratings ensure the Power 3's reliability. A fully balanced design, input through output, as well as single-ended inverting and non-inverting inputs, permits great flexibility with corresponding preamplifiers. A stand-by feature ensures the tubes are warm and ready to perform. A mute feature, when activated, enables easy and convenient interchange of cables and biasing of the Power 3's 6550 power tubes.

To find out more about their notable new line up of power amplifiers, contact Sonic Frontiers. To hear life beat in your heart, audition the Power 3 Mono Amplifier today.
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Consumer Electronics Show is always fun: You see and hear new stuff, greet old friends, and occasionally meet the disenchanted. Since the 1996 Winter CES was my first as a Stereophile writer, I was expecting more feedback than I’d previously received at shows, and I wasn’t disappointed. Despite an icy shoulder or two, most of it was positive, and some of it was flattering. But one reader I ran into was genuinely pissed at me for “wasting most of an analog column” writing about digital! He was talking about the January issue’s “Analog Corner,” in which I wrote about the Audio Alchemy DTH-Pro 32 and the major sonic improvements it produced with CDs. He punctuated the reading of his analog riot act with “Hey, I don’t even listen to CDs!”

That was also the column where I wrote, “You think I’m a slob? There are still audiophiles who refuse to listen to CDs, period.” I think that slightly derisive comment is what really set him off. So will this column, because it’s also about digital—sort of—but I hope all you analog devotees will peruse it anyway, along with the digital-only readers who usually cross the street when they reach the “Analog Corner.”

Digital versatile disc

Before I get to what I wanted to write about this month, I must tell you about an incident at the ’96 WCES. Toshiba sponsored a press dinner to launch DVD. Probably a hundred journalists were there, and Toshiba’s Craig Eggers was talking up the new DVD format for both video and audio. I’m paraphrasing now, but Eggers goes, “And while the new audio format has yet to be agreed upon, even a committed analog fanatic who thinks vinyl sounds better than CDs, even Michael Fremer, will be impressed with the sound of the new format.”

So, much of the audience guffawed, but over at the next table where the “it all sounds the same, let’s take the fun out of this stuff!” crowd was sitting comes the hiss of a derivative airbrake (“tssssss”). The sound served only to fan the flames under my already massive ego, which had just been greased and grilled to perfection before my peers.

Hiss and diss

ALL YOU WANT, OH DIGITAL SHILLS!

These guys don’t give up. How are they going to write about this new and vastly improved digital sound, when they’ve been spouting “virtually perfect” about 16-bit digital for over ten years? Diss me with their airbrakes ain’t gonna do it, not when, as you will read later, the guys who work in studios and mastering suites every day hear the very significant differences between their mike feeds and the recorders they use.

Hiss and diss all you want, oh digital shills, you’ll be eating your words for breakfast, lunch, and dinner before you’ll be able to convince your gullible followers that there’s something better than perfection coming down the pike on those high-density DVDs.

AAARGGHHHHHHHHHHH!!!!

Actually, I know what their cop-out will be: They’ll ignore the possibility for improved sound and concentrate on the glories of the surround channels. This will be a good thing if it can be done without crapping up the two or three channels in the front. But if adding extra channels does crap things up (as I’ve heard at all of the AC-3 demos I’ve attended), they’ll ignore that too. It’s the nature of the beast. That’s why David Ehrlich (with whom I shared a table at that dinner) wrote in the New York Times in mid-January that DVD “look[s] and sound[s] as good as the film in your local movie theater.” Yes, as shown at Toshiba’s display with a Faroudja line quadrupler, Runco projector, and Stewart screen, all hand-tweaked by Joe Kane literally by the hour, it looked shockingly close to film. But will more than a few Times readers spend the $75,000 or so to get that kind of picture at home? No. So why the hyperbole? Frankly, rather than helping to successfully launch DVD, such talk will only lead to mass disappointment, even though DVD’s picture—even on your average motel television—will look incredibly better than anything most of us have seen at home so far, including laserdisc.

A stellar listening session

I’ve yet to attend one of Stereophile’s mass listening sessions. Like you, I’ve only read about them, imagining the scene: your favorite audio critic dweeb sitting stiffly on backhanded chairs, eyes closed, grimaced faces frozen in serious sonic concentration as loudspeaker after loudspeaker is paraded behind a dark mystery scrim in a dangerous game of high-stakes audio poker. Wow! The tension! The bad breath! The B.O.!

Surely my opportunity to experience such audiophile thrills in the presence of my peers will come to pass. [Keep this up, Fremer, and it most surely shall.—Ed]

Meanwhile, imagine this scene: crowded around the mixing board at Hollywood’s Ocean Way, many an audiophile’s favorite recording studio, are (starring in alphabetical order) Bob Clearmountain, Bernie Grundman, George Massenburg, Doug Sax, Bill Schnee, and Ocean Way owner Allen Sides. Do any of these guys need an introduction?

On the other side of the glass is a jazz combo which Sides has miked and mixed through the console. The board’s output is fed to four different recording
only one component in your system can be designed to be completely neutral.

only one company is actually designing them that way.
Think about this: of all the components in your system, cables are the only ones that can be designed to be completely neutral.

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* For a complete technical explanation of RSC design theory, please see our four-part series “The Science of Cable Design,” appearing in Stereophile, May 1996. Or call TARA Labs to request reprints.

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“Yes? May I help you?”
“Yeah, two for the spa.”
“Ah, that’s the ticket! Man, there’s nothing like a soak in a Jacuzzi to boil away the cares of the week.”
“Yeah, not bad. Actually, I prefer the steam room, it really relaxes me better than just about anything.”

“We’ll hit that next. Too bad it’s the masseuse’s day off—a rubdown from lovely Helga would be just perfect.”
“Yeah—hummer. But Larry Archibald’ll be glad we didn’t run up too big a tab here.”
“Speaking of Larry, we’ve got another big Show overview to overdo for Stereophile.”
“I wish you hadn’t brought that up. I was just starting to relax. Well, I’m sure we’ll figure it out. We saw so much stuff, it’ll probably come together pretty easily.”
“I hope you’re right…”
“It seems like only five days ago that we first got here.”
“We’re in Las Vegas—time is irrelevant.”
“I dug getting here a day early and checking out some of the exhibits before the Show officially opened.”
“The most interesting setup had to be the one we saw that day in the ProAc room.”
“The Atlas Stands? Yeah, those were cool. Of course, you
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r. Once we heard it in the Wadia room with the Pass Labs Aleph 1 amps and Wilson Audio WITT speakers and Transparent cables, it definitely grew on me."

"That was one of the setups that just lent his voice a credible there-ness."

"Who says they don't make big-band music like that any-

more? And I've got to give the folks at Wadia points for making their gear upgradeable. The new versions of the 2000 and 64.4 Decoding Computers can bring a seven- or eight-year-old product right in line with their top of the line. I'll bet fear of obsolescence prevents a lot of people from buying big-dollar digital."

"The Good Doctor was making good medicine in both the Cary and Polyfusion rooms as well."

"I know Cary had their CD-300 player and the AE SE-811 amps, but what were those speakers?"

"The Focal distributor had 'em made to spec as a showcase for his drive-units. They sparked a whole lot of interest, but word is the designer, Timothy Eames, who wishes to remain anonymous, hated making them."

"Well, they made some good music. He'll have to take his phone off the hook."

"The all-Polyfusion system with Thiel CS7s was sounding fine, too."

"Is it just me, or do Thieils sound better than they used to? I used to find them a little on the steely side."

"I don't know. They sure sounded sweet everywhere we heard 'em at this Show."

"Speaking of sweetness, those big, white monolithie speakers from the folks at FM Acoustics sounded surprisingly light—and I mean that in a good way—for such big, gnarly boxes."

"Driven by their own electronics as well. Yeah, it was almost as sweet as those liqueur-filled chocolates they gave us, that you kinda spit on your lapel."

"I was concentrating on the music."

"We did have some really cool demo cuts this Show."

"And the most bitchenest one . . .?"

"No contest! Speedy West and Jimmy Bryant's 'Blue Bonnet Rag.'"

"Absolutely. What a duo! Like Martin and Lewis . . . Lewis and Clark . . ."

"Brownell and Rosen . . ."

"Laurel and Costello!"

"An amazing recording. The album title fits, too—Stratosphere Boogie: The Blowing Guitars of Speedy West & Jimmy Bryant. Forty-two years old, mono of course, but it sounds so clean and live, it's as if it was recorded yesterday."

"A large part of which has got to be thanks to that mastering genius, Steve Hoffman."

"Right. He's also the guy who makes those DCC reissues sound so good."

"This is a killer. It's almost like they were there actually playing in the room!"

"Well, some rooms more than others, natch. Speaking of which, it was that tune that led Matthew Bond of TARA Labs to say, 'You guys like live sound—try this CD we produced in conjunction with Jeffrey Weber.' How nice of him! Can't wait to get home to give it a spin. Mr. Bond's room was sounding really good, too, with those big Sound Lab speakers connected up with his new RSC Decade cables and interconnects."

"Speedy and Jimmy were great in so many rooms. Even though the Basshalls weren't hooked up in the Gallo Acoustics room, they weren't particularly missed. The Nuclei speakers had plenty of low end this time around."

"And with the kind of imaging they get, who'd notice anyway?"

"Oh, and how about the two Mesa/Platinum/Yamamura rooms? Speedy'n'Jimmy jammed damned well in those two."

As usual, more traditional T&As were also at the Sahara, and if half as many people showing half as much excitement queued up for hi-fi as stood on line panting and drooling waiting for an escalator ride to the porno exhibits, you’d probably need a reservation to patronize your favorite audio dealer instead of having reservations about paying a visit.

"Take a cold shower! Get a life!" I yelled, elbowing my way through the vacant-faced crowd on my way to the King Tut room, where Classic Records was holding a press conference at which legendary RCA Living Stereo producer John "Jack" Pfeiffer was scheduled to speak. [See "Industry Update" — Ed.]

I start with software because software is what drives hardware, not the other way around. If there’s nothing to play, people won’t buy the equipment. The vinyl drought in the early ’90s almost killed the production of new analog gear, but now look: Turntable sales rose 27% in October ’95 with Zoo Entertainment and Razor and Tie Records will bring vinyl fans Dar Williams’s fabulous Honesty Room, two Graham Parker titles, and much more.

Classic also handed out samples of already-issued titles pressed on a new vinyl formulation from pressing plant RTI Records, which, while not earthshakingly better than the already fine original vinyl, does offer a greater sense of quiet, better low-level resolution, and smoother highs. Classic is offering an “upgrade” program for purchasers of titles pressed on the original vinyl formulation who want the new plastic. For the truly obsessed, Classic will also offer a limited-edition series of 45rpm “one-step” records. The company has also gone big-time into the gold CD market.

There was even more new vinyl at the Show from Mobile Fidelity (among the titles coming this year: Nirvana’s Nevermind, Sonic Youth’s Goo, more Cat Stevens and Moody Blues, Alexis Korner, BS&K, Toto, and Boston), DCC (Fresh Cream, same lineup as the gold CD, with eight tracks per side; Elton John’s Greatest Hits Volume 2, a new Stokowski 35mm Everest, and others), Acoustic Sounds, Cisco (Super Analogue Decca issues), and many others.

While there was some news on the analog hardware front, much of it was...
in the add-on phono preamp department, which tells me that many high-end companies are betting on their digital customers taking the analog plunge this year—a good sign. Sutherland, one of the few companies showing really high-end solid-state in the bi-level, announced the “instrument-grade” PH2000 phono section ($6800), but didn't actually show it. New Zealand's Plinius Electronics, distributed Stateside by Fanfare, also introduced a massive-looking, solid-state phono section.

Over in the Alexandria Towers, Jeff Rowland Design Group had a new phono section usable only with their preamp (it shares the power supply), while Ayre Acoustics was showing its new Deco-looking, full-function, solid-state preamplifier, which has an elaborate-looking phono board. Taking a cue from the video world's "flying preamp," Clearaudio introduced the tiny $1500 AMC (active moving-coil) phono stage for its MC cartridges; it fits between the cartridge body and the headshell. Wilson Benesch showed the Stage One RIAA headamp (60dB or 70dB of gain, $1500), which, while not as diminutive as the Clearaudio, is small enough to fit under the plinth of the Wilson Benesch turntable.

Tubed phono sections on display included Cary's PH 301 (43dB MM/59dB MC, user-adjustable loading), AudioPrism's Mantissa, Conrad-Johnson's top-of-the-line Premier 15 ($4000), Unison Research's Simply Phono (52dB gain), Audio Research's PH-3 (under review), the MPR 7K (40dB and, like the Unison, made in Italy), and N.E.W.'s battery-powered DCLP 55 (72dB gain, $2998). I probably missed a few, but the point is, many manufacturers believe that, with the resurgence of analog, there is a healthy market for high-quality, stand-alone phono stages.

Despite analog's big comeback, turntable and arm manufacturers were in very short supply. MIA: SOTA, Rockport, Inmedia, Linn, Eminent Technology, Wheaton, Oracle (are they still in business?), and Rega, who no longer have an American distributor. While many exhibitors used VPI TNT turntables (with VPI's new $2300 JMW Memorial arm), VPI wasn't officially at the Show, due to the tragic death last spring of Harry and Sheila Weisfield's son Jonathan.

On hand were Wilson Benesch with its ACT 1 and ACT 2 tonearms and turntables; Clearaudio with its soon-to-be-introduced $10,000 Reference turntable (shown with Clearaudio/Souther arm); Forsell, which had a static display of both its Airforce Reference 'table and a new Forsell Basic Reference 'table ($6900), which features a two-plinth design, electronic speed control, and a pivoted, oil-damped unipivot arm; Basis (with Graham 1.5t arm, both distributed by Musical Surroundings); Bob Graham! also introduced a "basic" version of his arm for around $2000; Roksan, which demod the Xerxes X 'table, Artemiz arm, and Shiraz MC cartridge; Kuzma (the Reference 'table and arm); Townshend Audio (Rock Reference with modified Rega RB300 arm); and Thorens, which showed a complete line of 'tables, including the special-order $17,000 Prestige.

MPR from Italy demoed its CM1 unipivot arm, while Unison Research showed the Nottingham arm and 'table. No one in the room knew how much the combo sold for, but someone volunteered, "I bet it's not cheap"! I'm sure! With the exception of Wilson Benesch's new line of carbon-fiber-reinforced cartridges—the Carbon One (0.58mV, $2800), Hybrid (1.89 or 0.58mV, $1700), and Matrix ($1100)—a new high-output Glider cartridge from Benz, and the Shelter

One Crown Jewel ($3000, imported by Sounds of Silence, Nashua, NH), I encountered only the usual cast of cantilevered characters from Clearaudio, AudioQuest, Lyra, Benz, Roksan, Transfiguration, Cardas, and van den Hul, which has a new US distributor, Stanalag Audio Imports.

Finally, I saw some neat accessories, including a $200 battery-powered demagnetizer from Musical Surroundings (distributor of Benz, Graham, and Bass), which is said to be more powerful than the one AudioQuest distributed a few years ago, and which includes the "ramp-up and ramp-down" feature of the Audio Physic unit. Also distributed by Musical Surroundings, a new line of recording fluids from Record Research Lab. A pair of record-cleaning fluids from Record Research Lab. A pair of record-cleaning and "restructuring" fluids, called Kynnyas from Bluemote of Florence, Italy, was on display at the Show.

Even though all of these analog manufacturers and distributors compete with one another, it would have been in their best interests to chip in and set up one or two rooms filled with their analog gear: turntables, carriages, accessories—maybe even phono stages and records—to make a concentrated statement that Analog is Alive and Well in 1996. But don't look for that to happen anytime soon.

Duh! Award: To Pacific Microsonics for not making a concerted effort to be seen and heard in this year of DVD. I brought a European Junior Hendrix HDCD® compilation to the Show—a recording that would make an HDCD believer out of the most cynical audiophile—only to find virtually no HDCD players. What Classic Records did with analog last year, saturating rooms with records and displays, is what Pacific Microsonics should have done this year with players, software, and their logo. They didn't.

—Michael Fremer
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“Yeah, well, you’d sort of expect an electric-guitar duo to feel at home in a room where the Baron amplifier was made by a giant of the guitar-amp world…”

“…and where they decorated the place with actual guitars!”

“True. The Platinum Reference One speakers, in both rooms, connected to the 5000 cables…”

“FIVE THOUSAND CABLES?!?! I don’t think there were anywhere near that many!”

“No, no, the Yamamura Millennium 5000 cables! Anyway, as I was saying, the sound was incredibly detailed, but not in a fatiguing way, and rich, you know?”

“Yeah — surprising how much bass came out of those little speakers when they played that Dead Can Dance cut.”

“Well, Platinum’s Phil Jones is a bass player.”

“He was familiar with the Speedy’n’Jimmy record, too. ‘Oh yeah, Leo Fender’s test pilots’ he said. The man definitely knows his guitar music. Impressive.”

“You know who else really dug Speedy and Jimmy? Clark Johnsen. Who knew it ‘Wood Effect’ him like that? Remember meeting up with him in the Diapason room?”

“But of course, ‘Best Software of the Show!’ he said. It didn’t hurt that he got to hear it thru those cool Diapason Adamanites. And our hosts followed with some Hendrix, making it a totally cool guitar experience.”

“Nice of Clark to give us that autographed copy of his Wood Effect book, too… but only one copy,”

“Yeah, like us, it was a one-for-two deal.”

“You had to know that S&J would be welcomed in a room where they were playing Tennessee Ernie Ford! Ron and Haei-Chi Sutherland’s, C-2000 preamp and A-2000 power amps were sounding even better than I remember from the LA Show. And you have to love someone who uses a Sony multisdic player with all that expensive equipment!”

“But not a normal Sony — remember, Ron’s heavily modified it.”

“True. And how about that short-it-out test Ron did? I can hear him now, saying, ‘These are the only amps I brought with me, so if the protection circuit doesn’t work, it’s gonna be pretty quiet in here for the rest of the Show!’”

“Of course, it worked as planned.”

“Of course.”

“I’m glad you turned me on to Cachao’s Master Sessions. Those are some really nice recordings.”

“And some consummate players. It’s amazing that this guy basically invented Mambo, was the precursor to Prez Prado and Tito Puente, and yet he hasn’t been known outside Cuba ‘til now.”

“The bowed bass and all that percussion came across great on the big Acardian Alon Poseidons. They went loud and did it proud.”

“No shortage of power from the slew of VTL amplification, which took up just about a whole wall.”

“Man, when I saw the Nova Evolution Reference speakers, I thought ‘I have to hear something that kicks on these!’”

“And Southern Culture on the Skids’ Dirt Track Date was the natural choice. I don’t know how many people who end up buying these $22k, 600-lb speakers are going to be playing SCOTS on them, but they should. And they should have a bigger room, too.”

“That is just a fine record. I’ve rarely heard a rock’n’roll drum so simply and palpably rendered by any recording.”

“I noticed in the Hales/Ayre/Cardas room, with the Hales Concept Five speakers and Ayre V-3 amp and K-1 preamp prototype, that Rick Miller’s voice was just right, you know?”

“Yes, I do know. And his guitar solos… so tasteful and well-resolved.”

“I always think we should take some vinyl demo pieces along — Dirt Track Date is even better on LP—but records are so bulky.”

“Not to mention delicate. If you don’t do some serious damage from playing an LP a bunch of times over a couple of days, you could easily mess it up just by toting it around.”


5 Southern Culture on the Skids, Dirt Track Date, Geffen DGCD-24821: (C1). Telstar T1620 (L1) (1992).

The sartorial joys of 3-D glasses: Robert Deutsch (left) and Lonnie Brownell (right) enjoy the Pope Music presentation on “Dynamic Fidelity.”
“And, as it turned out, most rooms with LP playback setups had a selection of vinyl that included something of interest.”

“And a lot of the same things, too. We heard the Classic Records reissue of Brubeck’s *Time Out* in more than a few rooms. Classic Audio's Prinstance.”

“Isn’t that fitting? Classic Records for Classic Audio?”

“Why...yes it is! Even more so when you consider that Classic Audio makes reproductions of classic speakers, such as the Hartsfield we heard—a much revered corner-horn design—a lot of the originals of which probably played the original issue of *Time Out*.”

**Jonathan Scull**

I got the assignment fax a short time before Kathleen and I left for CES: “We’d like you to cover cutting edge, Jonathan—spin it any way you’d like...” Fantastic—there are always statement-product gems to be found in crapulous Las Vegas.

Kathleen twanged on Friday morning as I made tracks to the bubble-breasted Triple-X exhibits. I hastily explained that no one in the atavistic hothouse that is the porno industry has any interest whatsoever in the hard-to-find CES Official Directory, so that’s where I always go first thing to pick one up.

We stopped to see Gentleman Jim Aud in the Purist Audio room, showing his new Radiant Optics cable enhancement on some sexy-looking Italian gear he’s importing called MTD. This disco-friendly, glow-in-the-dark cable upgrade comes complete with its own light source—plus a fan to keep things cool. Jim’s premise is that all cables are photo-active; simply put, light equals noise. (Not quite so wacky as it sounds—when I cover a tube under test with my hand in the George Kaye Audio Labs tester, I can easily hear the noise floor drop several dB.) By controlling the frequency of the light that does strike his cables, Jim controls the reaction. Once I’d retrieved my eyebrows from the ceiling, Jim bade us sit and listen. (Always a good strategy, no?) With the light on, the sound was fuller—more harmonic—more extended and clear, and definitely less grainy than with the light switched off. The soundstage also seemed to benefit—it became bigger and more airy when the cables were lit up. Kathleen felt the sound was quieter with the lights on, “a little more like balanced cable.” Exactly. The Radiant Optics option costs $700 for standard lengths on their Coldusis, Proteus, and Dominus cables.

Remaining in an esoteric state of mind, we dropped in on Griff Hopkins of Primus Technology Group—(770) 513-2792. He was demonstrating Elysium Engineering’s computer-controlled tube tester in (appropriately enough) Frank Morris’s Gold Aero room. While we waited for the IBM compatible to boot, Griff flipped through Vol.1 of the Gold Aero Tube Library—The Tube Complement and Substitution Guide, 1950-1995 (a $49.95 must-have for tube mavens). Griff showed off several features of the unit’s software side, including automated testing and matching routines, transfer curve-fit functions, spectrum analysis, and distortion and noise tests. There’s a storage/database function, of course, and full printing capabilities. At a projected price of $2500, the tester requires only a lowly 386 or above, a free serial port, and an inexpensive SoundBlaster card. The Windows interface is easy to use, and the tester can measure all low-level and most power tubes. (It won’t do so-called “bright emitters” like the 845, which needs a 2000V power supply. Oh, well, they say you can’t have everything.)

Cutting the edge horn-wise, we listened to the German Avantgarde Acoustic Lautspreichersystem in two rooms. We heard the Profile Trio Compact (crossover and four subwoofers, $33,995) on Audio Note electronics—I3/DAC3/M2 preamp—in their room (not bad sound, but not great), and the Profile Duos (crossover and two subwoofers, $15,995) on a Kegon/DAC4 Signature/Burmeister transport/M7 preamp in Audio Note’s own room. (Audio Note USA is importing the Avantgarde speaker line.)

We came away distinctly underwhelmed, but I explained to Kathleen that room considerations might be the problem. Driving the point home, we caught a glimpse of the musical magic we normally hear in our own system from the Jadis Eurythmie hybrid horn speakers ($37,000) in importer Frank Garbice’s Northstar Leading The Way

When thinking cutting-edge audio opulence, the mind naturally turns to Italy’s Unison Research.
“Vaie... they were the ones with the big pantry amps, right?”
“The what?”
“Your, their VV 52B amps, the ones that had five big, squarish canisters, like you’d use for coffee, flour, sugar...”
“Oh, yeah! Those were pretty amazing. And those Vaie tubes, also called VV 52B, look mighty serious as well. It’s comforting to know that there are people out there trying to build better tubes, ’cause the world’s supply of NOS tubes won’t last forever.”

setup, driven by an all-Jadis front-end consisting of the four-chassis JP 200 preamp, a J1 Drive/J1S Symmetrical Converter, and the lovely new Jadis SE300B amps suavely aglow with those fabulous-sounding Western Electric tubes.

More amps cutting the edge included Audio Matière’s $33,000 Ultima monoblocks, imported by Ron Hedrich at Marigo Audio Labs — (847) 674-1265. These stunning amps, designed by Jean-Jacques Van Leeuwen, sounded terrific on Audio Physic Virgos with AM’s new top-loader CD transport (the Dialogue) and tubed DAC (the Arpege). The 60W single-ended triode monos combine a 211 with an 813 in an unusual triode/tetrode topology.

Another amp sliding along the cutting edge hailed from venerable Audio Research — the $30,000 Reference 600. “They’ll put out 600W on a good day using 6550s and all-tube regulation,” explained ARC’s Mike Harvey. It was driven to their interesting new $8500 Reference 1 preamp, featuring monaural-contact, spring-loaded volume and balance controls. Among other goodies, the preamp sports separate transformers for high and low “ten-
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wears out. Could be 10, could be a hundred."

"Well, if they do a run that's ten or less, I want to buy all ten!"

"Start saving up — they won't be cheap."

"And I can't believe they're going to be issuing CDs now!"

"Strange but true."

"But back to vinyl. We can always count on the Mobile Fidelity room to supply us with an LP fix."

"Wasn't that weird when we were hanging in the back of their room and heard what sounded like Neil Young singing, so we went forward to listen more closely, only to find that it was really Willie Nelson?"

"That had me going! I thought, 'Gee, something really strange about this room and system to do that.' It cracked me up when it turned out to be Neil's Old Ways album; that really was both Neil and Willie, switching vocals in a duet at just the right time."

"Sean Britton from MoFi got a kick out that. I like that guy."

"I got a kick out of hearing The Fantasy Film World of Bernard Herrmann LP there..."

"And the MF reissue of one of my favorite albums, REM's...

...it's simply gorgeous. The chassis is finished in Italian Nut (no jokes, please) with a leather fascia, and ceramic shells covering the tubes. The preamp sports fully discrete circuitry in all stages (biased with a lithium battery), input selection by nitrogen-filled relays with gold-plated contacts, and all connections are made with high-purity silver cable. "Circuits are of the fully-floating type and supported on ceramic blocks to prevent valve microphony. The unit is provided with an independent class-A amplifier for the head-

or 16 ohms using four 813 power tubes. It still looks like a furnace. In fact — I thought he was kidding when he told me this — there's a special energy-saving (for your house!) computerized duct system available for in-wall eye-level installation!

From the gargantuan to the petite: Acurian Alon's $10k Adriana statement minimonitors are beautifully finished in solid cherry with a piano-poly lacquer. This attractive 2.5-way design features all-cobalt drivers with the same dipole tweeters as in the big Phalanx design and two bipolar 5" bass-mid-range units front and rear (the rear crossed to play the bass range only) in a tri-wired, twin-reflex design. They sounded great, but I was shivering so bad from the VTL-induced heatwave I couldn't stay long. A big meaty sound from diminutive speakers.

The Sutherland pair — Huei, Chi and Ron — introduced their "Instrument Grade" A-2000 power amplifier ($10k/pair), C-2000 preamp ($8000), and PH-2000 phono preamp ($6800) at the Show. The music was extra-sweet, clean, and extended through a pair of Wilson WATT/Puppies. The Sutherlands made better sound than I've ever heard from them before — taste and style personified. Also up there in the beautifully-made-and-priced-to-stay-that-way category was the Accuphase PS-500 Clean Power Supply at $6k the pop. That's gotta be the most expensive power conditioner on the market; I'll be happy to report the results when it arrives.

Winding up, let me mention the impressive sound Emmanuel Go managed with his new Presence Audio Paramount tubed line-stage preamp, a $5700 contender if I ever heard one. It delivered an enormous and detailed soundstage through a pair of Speaker Art Clef speakers which cost — get this — only $1195. Truly amazing. Another modestly priced rig that knocked us out was to be found in the Sumiko room. John Hunter played us the simply unbelievably fine Vienna Acoustics Mozart speakers, $2500/pair, driven by an Audio Research CD1, an LS22 preamp, and the new D130 solid-state amp. The sound was just incredible: huge and musical. If this is the way audio is going, bless us all — we're in for some great times!

— Jonathan Scoll
The KPS-30i is the newest addition to the Krell Playback Series of components. Borrowing from the revolutionary technology developed for the KPS-20i, its predecessor, the KPS-30i delivers exceptional performance at a more affordable price. The KPS-30i utilizes the same advanced digital reconstruction software, Motorola processing engine, jitter-free CD playback and analog output stages that have established the KPS-20i as a world-wide reference.

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contacts, all tube gain, and everything can be controlled via remote. Very sexy.

"Makes a nice match with the Reference 600 mono-blocks, which aren't exactly sexy, but which are to lust after."

"Sigh...all that ARC gear, with Genesis 2007 and Model 7 surrounds...beautiful."

"I was happy to see some mighty tasty affordable stuff at the Show, too, like the Minium system from Micromega."

"Definitely, CD player, integrated amp, and speakers, for

about 1900 bucks. And the sound was outstanding."

"And loud."

"Hell, it even comes with an MM phono input! For under $2k, you can't go wrong, from the way 'Voodoo Cadillac' came across. In fact, wasn't that the same cut we played in the JoLida room? Quite an array of attractive little integrateds JoLida has in the $500-to-$1000 range."

"Now any life can be enriched by the glow of tubes. And that's a good thing."

"You bet. Their SJ202A-based system with the little Alon Petites was positively foot-tappin', and that system was under two grand as well!"

"There you have it. The Micromega system is solid-state,

face-mounted, even the DSP chips, the Burr-Brown PCM1702 DACs, and the output op-amps. A software-driven volume control adjusts the output level by remote control, allowing the 27 to drive a power amplifier directly. Suggested retail price is $8450.

Owners of Wadia's 2000 and 64.4 Decoding Computers can upgrade their units to Wadia's latest technology, including remote-controlled operation. The 2000 upgrade costs $3690; the 64.4 upgrade costs $4490. The factory modifications also begin a new five-year warranty period.

Swiss manufacturer Ensemble consistently produces superb sound at shows, and this event was no exception. Ensemble's Dichrono Drive and Dichrono DAC at the front end of an all-Ensemble (including loudspeakers and cables) produced a wonderfully musical and inviting sound. The Dichrono Drive uses a TEAC mechanism floating on a dual-isolation suspension.

If you've listed after the highly acclaimed Accuphase DP-75 CD player but couldn't pop for the $9995, you'll be interested in their new $3995 DP-55. The DP-55 has similar circuitry to that in the DP-75, but uses just three DACs per channel. However, you get the same transport mechanism, lavish build quality, and gorgeous cosmetics.

In a similar vein, Forsell introduced a more affordable version of their acclaimed Air Reference CD transport and Air Reference D/A converter. The new Air series (which lacks the "Reference" designation) includes the Air Silver and Air Gold transports and processors. The new units have a gorgeous, high-gloss finish and gold or silver trim. Forsell has adapted their air-bearing technology to the Philips CDM-12 transport mechanism for this lower-priced (for Forsell) series. The transport sells for $5900 with silver trim, $7900 with gold trim. The processor will set you back $3900 in silver and $5900 in gold. (Yes, you get real gold for the extra 2000 bucks.)

Classe showed the companion transport to their terrific-sounding DAC-1 digital processor. The $2495 CDT-1 transport features a hefty power supply, elegant chassis, 3/8"-thick front panel, and a custom-machined remote control. Classe also announced a price increase across their line, including a $500 jump for their DAC-1 processor ($3995 to $3995).

I had a fortunate and unexpected encounter with Floyd Toole in the Infinity/JBL display.

Audio Alchemy's DDS Pro transport.

over at the main convention exhibit area. Dr. Toole mentioned casually that Harman were working on a system that would produce five-channel surround-sound from just two loudspeakers. Noticing the quizzical look on my face, Dr. Toole had me stand at a precise spot in front of a small video monitor that was flanked by two tiny loudspeakers no more than 12" apart. Seconds after a clip from a surround-encoded laserdisc started, I was swinging my head around looking for the additional loudspeakers—which didn't exist, of course.

The impression of rear sources was
dely works well with Timbre's new $3495 TT-2 CD transport. Polys
fusion Audio has redesigned their processors to include the Pacific Microsonics PDM100 HDAC decoder/filter. The new Model 905 sells for $4250, and the 805 costs $3250. The non-HDAC versions of these processors, the Model 900 and Model 800, are still in the Polysfusion Audio line. Finally, Valve Amplification Company (VAC) showed production models of their 20-series transport and processor, first shown in prototype form at the 1995 Chicago CES.

—Robert Harley
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"On the subject of affordability, it was great to finally hear the Sonic Frontiers Anthem integrated, too.

"In a highly unlikely pairing with the B&W Silver Signature monitors."

"It was swell of Sonic's Chris and Chris to keep their room open after closing hours to let us check it out, too."

"Nice guys, Canadians, you know."

"I can hardly wait to lay ears on the new Krell KAV-300/150W integrated."

"Everybody's getting into the more-bang-for-the-buck act! For $2350, it's sure to appeal to a lot of folks who dream of owning Krell, but thought they'd have to mortgage their firstborn to do it."

"It's a trend I can get behind. It might match up well with those new $600/ pair AE109 tower speakers from another company from whom you'd expect to see only expensive stuff, Acoustic Energy."

"I don't see why not. They sounded righteous with the all-Audio Alchemy front-end they were playing through 'em."

"The N.E.W. guys had a BIG room, with those Von Schweikert Research VR-4s powered by — of course — N.E.W.'s all-battery-powered DCA 66 solid-state amp, DCP 33 tube preamp, DCLP 55 phono preamp, and DCIA 55 DAC. Fortunately, N.E.W.'s Mitch Friedman was as ready to cut loose at the end of a long day as we were."

"Nothing like an impromptu rock'n'roll record party. That 'Camel Walk' song by SCOTS slays me!"

"I noticed — every time Rick Miller howled, you howled along with him."

"It's the natural thing to do. It was great, too, how Mitch would saunter over to the rack and torque the volume control up just a little more every now and then."

"Absolutely. That SCOTS album has that in-a-small-club raucous feel, and lots of volume only makes it sound more like that."

"Those cute little N.E.W. amps seemed to go to 11, too."

"And just to make it easy to remember, all the aforementioned N.E.W. products are priced at $2998!"

"I guess that explains it. I asked Mitch how much he paid for a particular LP in his collection, and he said '29.98.' Sounded a little high, but maybe he was just, you know, snick."

"It was fun in the Joseph Audio room, as well, listening to Orange Crate Art and the outstanding DCC Pit Sounds."

You want single-ended? You want push-pull? David Manley offers both in his SE/PP 30 monoblock. And nice tie, David. You're obviously well-connected!

at the end of a long Show. Our emcee, George Stanwick of Stanalog Audio Imports, appeared to be diggin' it.

"It's a good thing, too, after ProAc's Richard Gerberg tried to lock us out. Analog George went above and beyond the call when he re-cabled the system so we could have right-channel-only mono."

"It was worth it to experience the a cappella 'Wouldn't It Be Nice' from that primitive stereo version you had."

—Jeff Joseph's current fave record, The Rentals' Friends of P. The RM-50si speakers sounded better than we've heard 'em at other Shows. He worked really hard to get that pinpoint imaging. I'd love to hear them in a big, expensive room."

"He was using Audio Research gear, right?"

"Yep, and Cardas cables with Bright Star Audio vibe control."

"All that sand. Probably why Brian Wilson was so at home there."

"Speaking of Audio Research and Brian Wilson, Orange Crate Art was rather melodious on the ProAc Tablette Signatures, as well."

"Amazing how those tiny things and the simplest of setups could sound so damn good. Where did all that bass come from?"

"Those little fellers just, I don't know ... blossomed music. It was cool, just hangin' with Bob Reina and spinning CDs at the end of a long Show. Our emcee, George Stanwick of Stanalog Audio Imports, appeared to be diggin' it.

"It's a good thing, too, after ProAc's Richard Gerberg tried to lock us out. Analog George went above and beyond the call when he re-cabled the system so we could have right-channel-only mono."

"It was worth it to experience the a cappella 'Wouldn't It Be Nice' from that primitive stereo version you had."
“We stayed for several cuts in the Audio Artistry/Rowland/Cardas/Audio Power room, didn’t we?”

“Seems like everyone did. That setup did everything well. Just... where... great.”

“Good thing we happened by there again. We obviously hadn’t heard that system at its full potential on the first day.”

“Well, the speaker cable to one of the tweeters had been wired out of phase, which they fixed, and they changed the setup. This speaker is pretty sensitive and loud, so it was like listening to two different systems.”

**Shannon Dickson**

Starting in the Sahara bi-level, that bastion of tympanic walls and tight spaces, special mention must go to the various ESP Concert Grand displays. Like last year, these $15,000 speakers produced generally superb sound in difficult conditions. I particularly enjoyed the even, spacious presentation in the Balanced Audio Technologies room, driven by the new $5000 BAT VK-500 solid-state, dual-mono stereo and $4000 KV-5 preamp. A pair of Quantum processors ($3300) and a Cesium transport ($3500) from Resolution Audio served as the source.

Sound Lab’s A-1 electrostatics ($13,250) sounded surprisingly good in a tiny demo room! with an Accuphase DP-75 CD player ($9995) directly connected to a pair of Fourier Panthere 200W OTL monoblocks ($9950). Handcrafted Italian Tokho cables were used throughout.

Symphonic Line’s Bel Cantos ($16,000), paired with their RG-4 monoblocks and a Timbre CD system, also gave a good enough account of themselves in a poor room to prove that my special regard for them at Stereophile’s HI-FI ’95 had been no fluke.

MBL displayed both their flagship 101 ($29,900) and the new 111 ($13,900 to $17,250, depending on finish). MBL’s electronics were used in their own two rooms, but I enjoyed the sound of their 111s most in the Convergent Audio Technologies room, driven by Ken Stevens’s all-tube JL-1 100W mono amps ($19,500/pair), a CAT SL-1 Signature Mk.2 ($5950), and a $12,000 Forsell turntable with a Sounds of Silence Crown Jewel cartridge ($2850).

Another interesting hi-tech, quasi-omnidirectional design was the $18,600 German Physiks Borderland, which produces a full 360° horizontal dipole dispersion from 125Hz to 18kHz via their DDD Bending Wave titanium transducers. A “decoupled” push-pull bass system is said to extend the response to 25Hz. This speaker presents a relatively easy amplifier load.

**Eggleston Works is Definitely A Company to Watch.**

Whatever you attribute it to, that system was just plain working, you know? The Beethoven speakers and all those battery-powered electronics did remarkably equal justice to the scale of Dr. John’s big band and the intimacy of his vocals. Speedy and Jimmy just tore it up, and SCOTS rocked!

“The performance of the Show had to be that piano solo from the *Violins Valenatal* disc [see “As We See It”—Ed] that Tom Miller got from Peter McGrath at Eggleston Works.”

“You hit the nail. It was like a performance. It was better than reproduction!”

Audio Artistry’s statement Beethoven speaker sounded superb with battery-powered Rowland amplification.
"It's a damn shame we never made it to the Eggleston Works suite at the MGM Grand, I heard so many good things about it."

"We even asked at the front desk, but they weren't listed. I guess we should've knocked on every door until we found them."

"I hate it when I miss something good. It's hard enough to get to all the rooms at the official venues, let alone trying to find out about and get to the secret locations."

"Yeah, Bummer."

"On a more uplifting note, it was a rare treat to walk into the Thorens room and see a sea of turntables."

"Really great. They must've had about 10 different tables. But we didn't listen to any LPs there, did we?"

"No! That's the funny thing. We listened to the Beau Hunks doing 'Powerhouse' from the Raymond Scott album. They were using their gorgeous line of compact 2000 series components..."

"Yeah, those illuminated faceplates gave me an inner glow..."

"...right, and they're so tidy and compact and fit together so well. They were getting a fine sound out of some

"dynamic compression loading," and tri-amped with a bank of VTL 225s, two VTL preamps, and a McCormack/Audit/VTL digital rig. Discovery cable connected everything. The sound had a lot of swing, imaged well, and was very musical playing the selections I heard.

FM Acoustics showed their version of a complete system with an as-yet-unnamed/unpriced Swiss-designed speaker using active crossovers and bi-amped with two 411 stereo/amps costing $22,000 each! The system also includes their $18,500 model 222 line stage and $9000 balanced phono stage. Source gear included a Wadia 21 CD player and Wilson Benesch Act 2 turntable, arm, and cartridge. As the total system price tops out at a heart-skipping $135,000, a little subtraction reveals that these are very expensive speakers. The sound was clean, clear, and very quick, with little veiling, particularly from the midrange on up—

rear-firing transmission line. A principal design goal was to match the acoustic pressures on the front and back of the drivers, to minimize any back-pressure distortion radiating through the drivers.

A set of Transparent Reference 240 monoblocks, a Timbre Technology front-end, and a Nagra-D playing some of Gabe Wiener's 20-bit master tapes.

Another candidate for JA's Best Sound at the WCES ESP Concert Grand speakers driven by Manley 240 monoblocks, a Timbre Technology front-end, and a Nagra-D playing some of Gabe Wiener's 20-bit master tapes. Instead, the midrange response is shaped by the 6" driver's natural rolloff, coupled with a short, damped, rear-firing transmission line. A principal design goal was to match the acoustic pressures on the front and back of the drivers, to minimize any back-pressure distortion radiating through the drivers.

A set of Transparent Reference cables was used with a Mark Levinson No.333 amp ($8500), No.385 preamp ($6495), and No.31/30.5 CD rig ($24,450 total), augmented by a killer $25,000 Nagra 20-bit tape deck feeding Meridian's 518 ($1650). This combo resulted in a stellar source system for playing McGrath's own outstanding master tapes. In particular, the tape of a pair of Russian piano virtuosos [see "A's We See It"—Ed] was a knockout—really gorgeous—and showed off the excellent transient response and even tonal balance of these speakers. Eggleston Works is definitely a company to watch; the Andras was a real bargain among the expensive speakers shown this year. I would probably have voted the Andras my favorite of the Show were it not for the awesome Audio Artistry Beethoven.

Anyone who reads my review of the Audio Artistry Dvorak elsewhere in this issue will know I was looking forward to hearing their new flagship debut at WCES. The Beethoven takes Audio Artistry's dynamic dipole concept to the nth degree. The system includes eight 12" dipole woofers split between two very compact subwoofer cabinets and two main panels. (ScanSpeak provided a total of four proprietary 10" and four premium 8" drivers for dipole operation, along with a pair of custom silk-dome tweeters used as monopoles.) This $24,750, bi-amped, four-way system also has a pair of external passive crossovers for the main panels and a fully balanced active crossover/ equalizer for the transition..."
Robert Deutsch

If Sam Tellig is—all right, was—the Audio Cheapskate, then I'm the Audio Moderate: I'm usually not satisfied with entry-level products, and although I appreciate all-out efforts to advance the state of the audio art, I'm more comfortable with products that offer value and quality at a reasonable price. When Wes Phillips suggested that I focus on moderately priced loudspeakers in my Show report, I immediately agreed. In my meanderings through the Sahara (the hotel, not the desert), the Convention Center (not so-affectionately referred to as the "Zoo"), and the various "off-campus" hotels that are part of WCES, I was constantly on the lookout for new/interesting/exciting loudspeakers costing between $2000 and $7000/pair. I didn't have to look hard to find plenty of worthy candidates. (With the obligatory apology to the makers of those I missed.)

Albert Von Schweikert, formerly the designer of Vortex and Counterpoint Clearfield speakers, has a new company, Von Schweikert Research, and a new speaker, the VR-4, which, at $3450-$3650, seems to offer an outstanding quality/value combination. It's a complex design, with five drivers and a two-piece stacking enclosure weighing in at nearly 150 lbs, and it sounded very good driven by N.E.W.'s battery-powered electronics. It sounded even better in Von Schweikert's own suite, driven by Balanced Audio Technology's VK-5/VK-60 combo.

Phase Technology has 24 speakers in its line (granted, some of them are in-wall and in-ceiling models), the most expensive being the $2000 PC 10.5. Fronted by not-quite-up-to-date electronics (older Proceed CD player, Conrad-Johnson PV-11 and MF-200), the PC 10.5 sounded clean and open when playing Stereophile's Robert Silverman "Cantar CD." One might expect that a speaker designed by the Shun Mook and Original Cable Jacket folks would be something really exotic, perhaps having an enclosure carved out of ebony, with an enormous purple pillow covering it. The Bella Voce ($4600) is in fact a fairly conventional floorstanding three-way using Dynaudio drivers. The enclosure avoids the use of internal cross-bracing, instead using asymmetrical reinforcement of the panels. Oh, yes, it does have those controversial Mpingo discs (eight inside the speaker, and three on top to serve as "tone controls"), and six Cable Jackets are used inside each speaker to shield crossover wires and circuit boards. The demo system was a strange mix: $13,380/pair Lamm M1.1 monoblocks and a $150 Pioneer CD player (Jonathan Scull tells me the latter had been highly tweaked.) I was actually quite taken with the sound, especially when they put on a Living Stereo sampler that featured Robert Merrill singing "Largo al factorum."

Long-time Stereophile readers may remember the Waveform, a Canadian speaker with an exquisite cabinet that received a not-too-positive review from Stereophile in the late '80s. The speaker has evolved over the years, with improvements in tonal neutrality, but its progenitor, John Orvós, now admits that it was always "an enclosure in search of a speaker." The new Waveform Mach 17 inherits only the name from the old speaker. It's a very substantial floorstanding three-way consisting of a subwoofer cabinet with two 12" drivers, and an egg-shaped "head module" that rests atop the sub cabinet. The head module can be tilted and turned, a feature that allows fine-tuning the soundstage for listeners not in the central sweet spot. The old Waveform was not really my cuppa, but I was very impressed with the Mach 17: excellent tonal neutrality, very dynamic, good imaging. (The supporting players were an all-Canadian team: Sonic Frontiers SFT-1 and SFD-2 Mk.II, Bryston 8B-ST and 3B-ST.) It has to be tri-amped (an electronic cross-over, built by Bryston, is included in the $5995 factory-direct price), which shouldn't be a big problem in these days of good multichannel amplifiers.

Gershman Acoustics and Focus Audio are two more Canadian manufacturers about to enter the highly competitive North American loudspeaker market. Gershman Acoustics had the $3600 Avant Garde, another floorstanding three-way, this one with the front panel angled backward to provide time alignment. I'd heard earlier incarnations of this speaker previously, notably at the CE-EX show in Toronto in fall 1994, and thought it had potential, but I was bothered by what seemed like boomy, poorly controlled bass. This time, with Copland CD player and electronics, the overall balance was much better, and the speaker had exceptional imaging. Focus Audio has an ambitious array of models in two distinct lines, at WCES they introduced the Signature Series Model 88 ($5995), which is to be second-from-the-top. To me, it looked and sounded very much like a top-of-the-line speaker: beautiful furniture finish, and a wide-ranging sound of great precision and dynamic freedom (Meridian 500 transport and 518 processor, dcs 950 D/A converter, Reference Line Model One amplifier).

Gradient is the Finnish company best known on this side of the Atlantic for the subwoofers they make for the Quad ESLs (old and new). However, they also make full-range loudspeakers; at WCES, they were demonstrating the latest version of the Revolution ($3395), reviewed by Dick Olsher a while back. Described as being a "point-source cardioid" design, the Revolution uses a 6.5"...
midrange with a 1" tweeter at its apex, and a single 8" side-firing woofer. Very good sound, and I loved the look of the associated equipment: **Bow Technologies ZZ-One** integrated amp and ZZ-Eight CD player, from Denmark.

**Unity Audio** has a whole new line of speakers, with ceramic composite drivers, minimalist crossovers, and "Interactive Fluid Coupled" enclosure technology. They also demonstrated their new DSP-based crossover, which corrects for analog distortions and allows control over the sonic perspective. It's in the form of a soundboard that slots into a computer, the board itself costing only "a few hundred dollars." Details remain sketchy — negotiations are apparently under way with several vendors — but a brief demonstration was quite promising, the sound (Cerous 6 speakers, EAD transport/processor, Sima amplifier) becoming more open and better focused in the DSP mode, without the hardening that sometimes accompanies this type of signal manipulation.

**YBA** can be relied on for tasteful, musically involving demonstrations in show contexts, using their own CD players and electronics but other people’s speakers. At this year's WCES, however, they decided to introduce to North America one of the YBA speaker models that have been available in Europe for some time. The Sonata ($1800–$2200) is a minimonitor that has only a capacitor across the tweeter, driven by the YBA Intégré integrated amp and a unique blue-laser version of the YBA CD1 player, the pair of Sonatas had a relaxed musicality that put many a multi-megabuck system to shame.

If there was to be a prize for Most Improved Loudspeaker, I'd be inclined to award it to **Gallo Acoustics**. The Nucleus has been described as looking like either a bowling ball or a huge eyeball, and has previously elicited admiration for its soundstaging, but not for its tonal balance, which most people thought was too top-heavy. It has been extensively revised, with new drivers, including a tweeter that is said to be smoother and more "equipment-friendly." Set up in the Nucleus Reference configuration ($3499), which includes one of the Basball woofer modules, the Nucleus had one of the least room-bound soundstages I've ever heard, and the highs seemed extended but not over-prominent (Encore D/A processor, Pass Aleph 3 amplifier).

On continued listening (this was one of the rooms I kept returning to), I thought bass weight and articulation could still use some work, but it could have been the room, too. In any case, the Gallo Nucleus is now much more than a speaker with a gimmickly shape. Vienna... city of waltzes... strudel... loudspeakers. Oh, you didn't know about the loudspeakers? I didn't either, but I certainly do now. **Sumiko** is about to distribute speakers from **Vienna Acoustics**, the various models being named after composers: Beethoven, Mozart, Haydn, Bach. (But, strangely enough, not Strauss. Could they be saving that name for an upcoming state-of-the-art model?) The model being demoed was the Mozart ($2500), a narrow-profile, floorstanding two-way that uses a ScanSpeak silk-dome tweeter and two 5.5" mid-woofers of VA's own design. Cabinets are hand-finished to furniture standard, and the sound of the Mozart (with **Audio Research** CD1, LS22, D130) would have made Salieri even more envious of his rival.

Though I see by the old word-count that I'm about to exceed my limit, let me just get in quick mentions of a few more interesting speakers heard at the Show... like **Audio Artistry**'s $4495 Vivaldi (from their composer series).... **the Rosinate** Evolution Signature ($6000), featuring a plinth made of a proprietary polymer called Dark Matter from **RFR Audio Laboratory**... the **Totem Acoustics** Tabu ($2995), a more grown-up version of the Model 1... **Joseph Audio**'s $5999 RM50Si, with their patented Infinite Slope Crossover... **Audiosonic's** ESH 50 ($2450) and ESH 100 ($3495) hybrids, now manufactured in the US by **Threshold**... **Hales** Concept 5, sounding great driven by **Sonic Frontiers**' new Power 3 amp... — Robert Deutsch
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held its own with the big boys.

"I remember it being excellent next door, with a Theta Basic front end playing through the new MBL 111s. That was the one room we played 'Exercise #14' from Zappa's The Yellow Shark. The dynamic contrasts, the layering of depth..."

"Hey, stop it, you're starting to sound like a reviewer."

"Oops. We also played Speedy & Jimmy, too, who zipped."

"From Zappa to zipped. That's everything from Z to Z."

"Other than the CD-3400, there were two other CD transports that stood out, at least because they were so ding-dang-ed popular — those from Enlightened Audio Design and Bow Technologies."

"The EADs did seem to be in a lot of rooms — the Audio Magic room, the JMLabs room..."

"...where it was coupled with an EAD DSP-9000 converter. That's the one where we played the Cachao disc. I

sounded quite good except for the all-too-common hotel-room bass problem. Remember? There was a resonance centered at a frequency Cachao would play on his bass, right on the beat, so it really popped out."

"Yeah — it's like you could see him stand and wave."

"Almost."

"There was an EAD T-1000 transport hooked up to a Conrad-Johnson Premier 9 DAC in the Rosinante/Fourier room. That's where they had a prototype Fourier Triomphe OTL amp, with the chassis made of that mysterious 'Dark Matter.'"

"That stuff looks interesting. They sure had some intriguing things to say about it, like how it's rumored to have been a byproduct of the government's alien research!"

"Their story is that this top-secret substance has a constantly varying acoustical impedance, making it an excellent resonance-stopper. The amp we saw is a one-off, but Fourier is going to make a Major Statement monoblock with a Dark Matter chassis as a production item."

"The Rosinante Evolution speakers sat on a Dark Matter..."

---

Robert J. Reina

The '96 Winter CES was the first time I experienced a Vegas show where there were very few rooms exhibiting bad sound. The only class of components more prevalent than Home Theater and single-ended triode amplifiers were inexpensive speakers, something that made this show just too happy. I encountered 33 speaker companies introducing interesting new speakers under $2000, but space limitations preclude me from discussing them all. The latest innovations in driver, crossover, and cabinet technology have trickled down to the lower-priced spread, which translates into a proliferation of great values. It also translates into deeper bass from smaller containers. Excuse the plug, but I must mention that the only demo CD I carried through the tacky hallowed halls was Stereophile's new Festival CD.1

By far the best sound from speakers under $2000 emanated from two speakers in the new Paradigm Reference line, the Studio 20 satellites (estimated US price $700) and the floorstanding Studio 60 ($1000–$1200). Using Paradigm's proprietary driver, crossover, and cabinet technology, with phase-coherent, flat frequency response as a primary goal, the sound from both of these speakers driven by Audio Research electronics was seductive and involving. I was particularly excited about the Studio 20, which sounded damn close to its big brother at two thirds the price.

I'm happy to see QLN trying once again trying to seek US distribution. I was a big fan of this Danish company when I lived in London in the early 80s. The $400 Model 111 was producing a big sound with very realistic vocal reproduction. Also shown was the floorstanding Model 122 ($600). Australian company Krix was seeking distribution for two two-way rearported designs, the Equinox magnetically shielded satellite ($500) and Apex high-efficiency floorstanding ($1000) speakers. Vocal reproduction in the Krix room was among the most impressive I heard.

Richard Vandersteen, who continues to amaze, has updated the Model 1B to the 1C. This features the Model 2Ce tweeter in a realigned driver configuration. Driven by a McCormack DNA-5 amplifier, it produced some of the best sound I've heard from a Vandersteen setup. In true Vandersteen fashion, the price remains at $695. (Vandersteen's Model 1 has seen a total price increase of just $45 since its introduction in 1981!)

Latvian speaker producer Baltlines is seeking a US distributor. They were getting some very nice sounds from their BL-90. Although pricing is difficult to determine (the company quoted importer prices FOB Latvia), I'd guess these babies would retail in the US at under $1000, as would almost all of Baltline's 30 models. Castle Acoustics showed two new models, the three-way Isis ($529) and two-way Clifton ($429). Definitive Technology showed their innovative BP-2002, a bipolar tower speaker with a highly adjustable built-in powered subwoofer in each cabinet ($1998). Very nice sound was being produced from these speakers driven by Pass electronics.

For those space-constrained audiophiles with high cosmetic standards, Dynaco showed their tiny, gloss-black HX-18/HLX-9 satellite/subwoofer system ($440 for satellites and one passive subwoofer). They've also brought back the A-25 Classic ($758) featuring SEAS woofer, aluminum-dome tweeter, and oak-veneer cabinets by Adrian (who also make cabinetry for more expensive Alon, Cello, and McIntosh designs). Dynaudio, from Denmark, in addition to showing their two-way Contour L3 ($1995), also was getting

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1 The Kodjiha track, a captivating piece of contemporary chamber music, turned out to be an extremely useful equipment evaluation tool. Because of the sound quality and varied orchestral textures, the first seven minutes of this piece should be sufficient for the trained reviewing ear to determine whether a component invites any interest.
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base, and were made of yet another special material, kind of a synthetic marble compound. They're so sleek, so sexy, so... dark.

"And the disc they were playing, by Keb Mo', sounded killer. I didn't even want 'em to stop it to play one of ours, which is quite a statement."

"It's on my to-buy list. The EAD player may have been enhancing more rooms, but the Bow Technologies ZZ-Two transport definitely wins for cool looks."

"That it does. It's a top-loader, so they could've called it ZZ-Top. The clamp thing that goes on top, sticking up and exposed like that while it whirls around, is hypnotic to watch."

"That's half the fun. They were using it with their own 75Wpc ZZ-One integrated amp in the Bow/Gradient room. We listened to Wilson and Parks' Orange Crate Art there too, as I recall."

"That's right. Very nice it was. They also had the Bow transport in the Artesuono room, and the Vaic room, too."

"What'd you think about the horn systems at the Show?"

"A mixed horn o'plenty, for sure. The ones from Avantgarde sure look wild..."

"Like the Sousaphone family portrait—poppa, momma, and the little tyke..."

"Like that, yeah. Maybe they need a different environment in which to work their magic. I'm not sure that they're meant for nearfield placement."

"They did do well with the dynamic contrasts on Björk's 'Blow a Fuse,' you gotta admit."

"Must I? I might go so far as to say they have potential. Then there were this year's edition of Dr. Bruce Edgar's Edgarhorns."

"They keep moving forward—as designs, I mean, not in the room."

"That would be scary."

"Frightening. The midrange horn, with that classic laminated salad-bowl look, was, I thought, visually appealing."

**Unison** tube electronics from Italy. **Harmonic Precision** showed their final version of the 2SC ($995), but I was particularly tweaked by the silent-display, bi-wirable, rear-ported, two-way Alpha ($495). **Joseph Audio**'s RM-7 ($1299), driven by Audio Research VTM120 amplifiers, was achieving the most realistic bass I've heard from a front-ported speaker.

Near the end of the Show, I was drawn into a room from the hallway by an incredibly realistic reproduction of vibes and other mallet percussion. The perpetrator: the **Master Sound Monitor** 1 ($1200), made in China and seeking a US distributor. **Mordaunt Short** has updated their Music Series range (seven models, from the MS50i satellite at $200 to the MS50i flooring at $1099). All feature injection-molded front baffles in which the basket is part of the molding, the design goal to enhance rigidity.

**Symphonic Line** is now distributing the Canadian **Numen** speakers and was obtaining a silky-sweet sound from the two-way, angled-front, flooringstanding Apollo 1 ($1600). **Scientific Fidelity** was getting quite nice sound from VAC electronics from their yet-unnamed, ultra-narrow tower speaker (working names Explicit, Zyzzyx, estimated at under $2000). Designer Jim Gala was captivating me with his taste in jazz through his stunning **Soundwave Point Source** 2.5 ($1890), which features very-long-exursion woofers and tweeters and no parallel sides to the cabinet. **Triangle** from France showed their Comete ($780), a two-way bass-reflex satellite.

Space precludes me from providing details on interesting new products from **Clements, Monitor Audio, N.E.A.R., PSB, Ruark, Signet, and Systemaudio**. Best New Recordings at the Show: Winston Ma's HDCD discs (available through **Golden String**). I listened through the entire eclectic mix post-Show on my CAL Icon II HDCD player and heard the most natural string tone and percussion transients I'd ever heard from digital.

For me, the highlight of any CES is when it's over. This is the time when I choose the one room where I hang for an hour or two and just enjoy the music. For the 1996 Show, it was the ProAc room. Okay, although I've greatly admired this company's larger, more-expensive designs, I've never been a fan of any of the ProAc Tablette models. I've never been impressed by inexpensive speakers that sound like expensive speakers with no bass. ("No bass" means not being able to convincingly reproduce 55Hz in an average room.) However, the new ProAc Tablette 50 Signature ($1700) definitely does bass!

—Robert J. Reina
**SE - 40**

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Golden Tube Audio is a trademark of Solo Electronics
Radiant Light Source cables, which have a water jacket and use light as a shield. When he lit those babies up, I’ll be darned if we didn’t sense more emotion from an already delightful sound.”

“Owners of PAID Colossus, Dominus, and Proteus cables can upgrade, too, for just the price difference between the lit-up versions and the standard unit models.”

“Jim Aud continues to push the envelope. Next time we see him, he’ll probably have interconnects that burst into flames.”

“And you know they’ll sound fantastic, too.”

“Hot stuff, like the loads of tube amps at the Show. Especially single-ended jobs.”

“Melos has joined that club with their new 70W SE-75s. They were doing good things with Dr. John through FMS interconnects. WireWorld cables, and Quintessence speakers.”

“Yeah. Speaking of good things, the tube electronics from Unison Research never fail to impress me with their elegant design.”

“All that sculpted wood is a joy to behold, you bet. Their ultimate design statement appears to be The Dream, a dual-mono preamp that looks like a scale model of a futuristic opera house.”

“The V.A.L. line from China sure was a dizzying array of attractive valve amplification. I especially liked the JD-L1 preamplifier—the one that looked like a solid, flat aluminum table with three hand-sized knobs, four stout little tubes, and recessed connectors all set into the top.”

“Combined with an EAI CD player, V.A.L.’s JD-845SE 30W class-A triode monoblocks and a pair of Alons, they had Orange Gate Art sounding ever so fine and mellow.”

“The Quadric amp and preamp in the Swans room were interesting. I like the cool-looking MT-35 power amp with the 845 or 211 output tube in that little cage—it could be right out of Fritz Lang’s Metropolis.”

“Their F-1 line preamplifier is way trick. The list of tubes it can accommodate is as long as your arm.”

“Not only that, but you can drop in four of mixed types without any adjustment! Whoa.”

“I think the Swans/Quadric room was where we first played Björk’s ‘Blow a Fuse (It’s So Quiet).’ That was a blast!”

“And do you remember the speaker-swapping ritual?”

“Yeah. Normally, we swap seats when listening, but this time the speakers were swapped while we stayed put. ‘Wait, if you guys want to hear something, let me put in the Allures!’ ‘But we haven’t got much time.’ ‘It’ll only take me a minute or two!’ So we waited, while the speakers were shuffled around for our enjoyment.”

“What a guy. And it was worth it, I’d guess; don’t know what the other speakers sounded like, but the Allures sure worked out fine.”

“And that Björk thing is such a riot—it starts out so peacefully, with Björk going ‘Shhhhh… shhhhh,’ then just explodes! Everyone wanted to turn up the volume at first…”

“And we’d have to talk them out of it. That’s just the kind of helpful guys we are.”

“I don’t know about you, but I just wanted to save my ears.”

“We need to get to hear David Manley’s Manley Laboratories SE/PP 300B amplifiers being switched on-the-fly between push-pull and single-ended. That was groovy.”

“I found the Beau Hunks doing ‘Powerhouse’ more on the dynamic and taut side in push-pull, and bloomier, rounder, and more atmospheric in SE mode. Which did you like better?”

“I want them both!”

Sam Tellig (left) rests his weary dogs in the Music Hall suite, while Roy Hall (right) summons up the courage to offer Sam a Scotch.

“That’s almost what Luke Manley delivered in the VTL room, with those 1250W Woran behemoths. They didn’t sound like I expected.”

“Well, we listened to them in triode mode at a mere 600W each.”

“But seated with the Alon Vs almost in our faces, I was amazed at how… just musical it was.”

“Yep. That system with the CAL Icon Mk.II, VTL DAC, and preamp, and Discovery cables is one I could have just sat and listened to all day.”

“It had that warmth, and did one of the very best jobs with Dr. John’s vocals of all the setups we heard.”

“Quite a one-two punch: the gruff-but-lovable father with soft-spoken, civilized little amps, and the mild-mannered son with a pair of brutish, big-assed monoblocks.”

“Brutish only in appearance. It was a study in contrasts. If I had to guess, I might have mixed up which Manley produced which amp.”

“I thought Madrigal’s new Mark Levinson No.39 CD player was kinda special. Imagine—an all-in-one-box CD player from Mark Levinson (the company, not the man).”

“But it’s so much more—it’s also got an analog-domain volume control and extra digital inputs, so you could use it… 13 Björk, Poe, Elektra 61740-2 (1995).
as a combination player and digital preamp. Just add an amp and speakers and you're in business."

"Very convenient. Speaking of convenient, California Audio Labs' two new full-on 20-bit H/D CD" CD changers offer those with discriminating ears the option of multi-disc playback in a convenient package.

"Interesting, too, that each will list for $1595, even though the CLD-10 is a transport only and the CL-10 is a complete player."

"Well, the transport has more attention lavished on the digital output side and signal re-clocking than the player does, so there it is."

"I don't think anyone had more new toys in their lineup than Audio Alchemy."

"It's hard to tell. You'll need a scorecard to keep track of all the stuff they've got coming."

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JACK ENGLISH

I love the neat little doodads and thingamajigs that squeeze an extra ounce of performance out of my system. I didn't have to look very hard to see (and hear) some groundbreaking new products at the Winter CES.

At the top of the list was CD Blacklight, from the fertile minds of Byron Collett and Victor Tiscareno of Audio-Prism, the same folks who brought us CD Stoplight. CD Blacklight is a phosphorescent CD mat, lightweight and thin enough to be used with virtually any transport/player. It is "charged" through exposure to virtually any light source. The mat is said to: 1) physically dampen the CD/clamp interface; 2) reduce electrostatic charges through conductive carbon traces around its perimeter and crisscrossing its center; and 3) cancel stray light through its luminescent face. In a brief Show audition, it did indeed reduce low-level noise. Expected retail price will be less than $50.

The most enjoyable new product was the Auri ($399), a groundbreaking headphone processor/amp from Virtual Listening Systems which provided Dolby surround-sound over headphones! The Auri consists of a small processing module that can be connected to any source, and a digital wireless remote with a built-in headphone amp. The latter has clever LED control indicators: Sitting right there in my hand were options for Volume, Balance, Mute, Bass, Bypass, Venue (theater, stadium, or club), Ambience, Hall Seat, DSP (Dolby Pro Logic, stereo, or mono), and "Ears" (a deceptively simple name for customized control of the system's Toltec 3D processing, which is based upon binaural hearing principles, head-related transfer functions, and advanced digital signal processing). The Auri was a blast; I enjoyed it as much as anything at the Show.

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Another headphone accessory that caught my attention wasn't for the golden ears among us. Thinking of those with severe hearing loss, Sennheiser introduced the SET 100-J infrared headphone system ($249). It consists of a T1100 transmitter/charger, two interchangeable rechargeable batteries, and R1100-J receiver/headphones. The latter weigh just 1.4 ounces for comfortable, long-term use. There are tone and balance controls, 124dB maximum output, and the ability to operate effectively over a 450ft² area. This splendid and thoughtfully designed product will help disadvantaged people enjoy things most of us take for granted.

For the athletically inclined, Koss displayed the KSC/20 headphones ($19.99), smallish "earbuds" with lightweight plastic clamps that go over each ear. There is no headband, nor is there a need to push the 'phones into the ears, as with many other sport models. For the true golden-eared couch potato, Grado was showing off the wonderful-sounding Reference Series RS-1.

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"That VRE v1.0 video thing..."
"What's VRE stand for?"
"Video Reality Engine. I'm not much of a videoguy, but I was surprised by the tricks it did to clean up the picture."
"Very impressive."
"And that digital remastering station they had set up was wild, too."

"More DTI-Pros 32s in one place than anywhere else in the known world."
"That's because we're in Vegas, which is part of the unknown world. It's a novel idea, having those DTI-Pros chained up, each running a different algorithm to recompute discrete parts of the audio spectrum, and then write 'em out to a CD-R."

of giraffes, saxophones, and palm trees.

Paul Barry Associates introduced stands with both casters and spikes. Their basic model consisted of a flat 18" by 20" platform (other sizes are available via custom-order) and three or four Spike Transports, each of the latter consisting of a flat arm with both a spike and caster. Once the amp or speaker has been rolled into that best of all possible positions, the spikes can be screwed down from the top to take the weight off the casters, then locked into place. The platform can support up to 300 lbs, and can be leveled or tilted as desired. Retail price will be between $140 and $170, depending upon the number of arms. The arms will now be available in silver or black, the spikes in aluminum or brass. The most popular lineup of accessories, used in no fewer than 45 display rooms, came from Barry Kohan's Bright Star Audio. Their biggest news was the introduction of the Air Mass 1 pneumatic and air-bearing isolation platform ($99). Measuring 16" by 16" and standing just under 3" high, the Air Mass 1 was being touted as a great means of isolating components from floor-borne vibrations, either by itself or as part of the Ultimate Isolation System (in conjunction with a Big Rock and a Little Rock). While the Air Mass 1 can only accommodate up to 99 lbs, future models will have greater weight capacities.

Custom Woodwork & Design (CWD) celebrated its 20th anniversary with the introduction of both the Wildwood Collection and Insights Traditional lines of stunning audio/video cabinets, while TARA Labs marked its tenth year with the RSC Decade lineup of cables. These feature small rectangular conductors of Consonant Alloy minimal dielectric material, and a unique 24-conductor geometry intended to reduce electromagnetic interaction.

Arcici introduced the new lineup of Imperial A/V stands, which make extensive use of thick acrylic shelving and 2"-diameter tubular stainless steel columns. Solid Steel showed their own expanded and visually refined line of equipment stands. To the expected consternation of zoning boards everywhere, Satellite Sky-Dome displayed a unique skylight enclosure, made from Lexan R, that completely hides a mini-satellite dish. It looked to me like a great idea, but I couldn't help but wonder who might be interested in Research Transfer Technology's new line of spark plugs designed by Dick Sequerra, and what type of speakers the brilliant Paul Hales will be designing for Samsung.

—Jack English

We wonder why no one thought of it before: Atlantic's Elvis' Guitar CD stand.
"And too bad Robert 'Don't Call Me Digital Lad' Harley got there before us; we would've gotten some tunes remastered, too, but we didn't have the time to wait."

"Not in the not-a-picosecond-to-lose world that is WCES."

"What did you think about the VMPS room?"

"Man, I thought it was pretty bitchin'. They were playing that DTS-encoded material — Tom Young's, or maybe Jung's, Big Band — and it sounded much more natural than what we heard in LA at HI-FI '95."

"Yeah, absolutely. Those VMPS FF-1 and FF-3 Focused Field Array speakers seemed to disappear. No mean feat, considering how big they are and how many were there."

"And each model features a veritable tour of driver types — cone woofers, dome tweeters, ribbon 'supertweeters,' and Dynaribbon midrange drivers."

"Those Dynaribbon jobbies were odd-looking, though. Kinda like a metal plate wrapped up in bubble-pack."

"Different, yeah; the VMPS folks have an exclusive on using 'em. Speaking of different, and speaking of speakers, the new Divine models from Reference 3A sure are night-and-day from their other speakers, the Grand Masters."

"But which is night and which is day? Funny, but I can't stop thinking that Reference 3A is a product name, not the company name. They likened the Divine, or la Divine in French, to their own Suprema, which is a two-parter, with bass box below and tweeter-mid above."

"But instead of boxes, the Divine is totally tubular."

"Fully, dude. A little over three-n'-a-half-feet tall, six-n'-a-half-inch-diameter aluminum tube, to be exact."

"Not your run-of-the-mill speakers. They wouldn't necessarily go unnoticed in your listening room."

"No, but the speakers from Sunrise might. Or at least their Panorama model, the one that's designed to be built into the wall."

"Amazing how they managed to actually install a pair in

THOMAS J. NORTON

It's always easy to come up with a snappy lead about Las Vegas — it's such an easy target. And while a lot of the derision is undeserved (get a mile or so away from the Strip and Vegas looks like any other wealthy, medium-sized Southwestern city), not too many CES-goers get on the plane home humming "My kind of town, Las Vegas is..." Nevertheless, few cities are better equipped to handle a crush of conventioners or tourists. There are, to paraphrase the cliché, more hotel rooms there than in any three third-world countries. And it seemed as if there were exhibitors in all of them! I thought last year's Show was monstrous, but somehow it just keeps getting bigger.

I was assigned to cover that little subcategory, Home Theater. Uh-huh. As I glanced over the pre-Show press kits, Show guide, and the sheer volume of space apparently occupied by projection systems, screens, and multi-channel this and that, I saw that I had my work cut out for me. DVD, of course, was the buzz at this Show. The demos I saw looked excellent — not without flaw, but I know of no medium that is. The usual big suspects were demoing — Sony, Thompson (RCA/Proscan/GE), Philips/Magnavox, Pioneer, and a gaggle of others I managed to miss. The acid test, of course, will come when we see actual production hardware and software.

The video signal on DVD is recorded in component form: Y (the black and white signal), Red-Y, and Blue-Y. Component video from DVD, both intuitively and according to those who have actually made a close comparison, produces a noticeably superior picture. And Toshiba's demo (Runco 980, Faroudja quadruplet, component video) was easily the video hit of the WCES.

In other DVD news, Pioneer announced the new Citation 75DP, which will perform both Dolby Pro Logic and AC-3 decoding. At $2100 for the base model (unmodulated AC-3 input only, for unmodulated Dolby AC-3 sources such as DVD), and $3000 for the fully equipped version (with Jim Fosgate's 6-Axis surround mode plus an RF demodulator for laser-disc-based AC-3), this is designed either to be a fully stand-alone device or for use with existing Citation or Fosgate processors. There is also another new Citation processor due soon, the 5.0 ($1995, THX, AC-3 only with an outboard processor such as the 75DP). The 75DP and 5.0 will be available in late spring.

There was new processor news as well. The Lexicon DC-1 announced in our CEDIA report last December (p.37) is scheduled for May release in three versions (the top model, with AC-3, costs $4500). Meridian's add-on AC-3 board for their 565 surround-sound processor is now available for $695; the complete processor with AC-3 costs $4490. And Kenwood's KC-Z1 offers THX, AC-3, and a slick, detachable, handheld remote touchpad controller, for $2800. "AC-3 ready" processors were introduced by Rotel (the RTC-985, THX, $1499.90), Carver (the Director CT-30X, THX, $1200), and Parasound (the P/S-1500, THX, $1500). These must all be used with external AC-3 decoders to reproduce AC-3. Two such external, bare-bones decoders were introduced: by Marantz (the DP-870, $670) and

CES IS MORE THAN JUST A COLLECTION OF NEW PRODUCTS WITH PRICE-TAGS.
their room at the Bi-Level.

"The fact that they brought their own wall probably helped a lot."

"Oh. I didn’t notice. They matched the wallpaper really well!"

"Spooky, that. I didn’t think I’d care for the sound of in-wall electrostatics, but it was surprisingly musical."

"10-4 on that. If you’re not a fan of intramural activity, they have more conventional floorstanding units, with electrostatic panels and dynamic woofers."

"But the prize for most unusual speakers must go to Scientific Fidelity."

"Don’t you mean ‘the most speakers that were unusual?’"

"Yes… I guess I do. I couldn’t believe that the big granite-looking cabinet thing that they were using as a bar, spanning the entire width of the room, was actually a subwoofer!"

"It’s a new way to hide a huge speaker: camouflage. That was The Beast, and each satellite is called The Beauty. Together, they’re known as $\text{pi}^2$, ‘cause that’s what they cost.”

"$99.87?"

"I think the decimal point slides a few places to the right on that. Must be — that emerald-pearl granite they’re finished in can’t be cheap, and the whole system weighs in at a beastly 3,000 lbs."

"What did you think about those new speakers that Mike Maloney, SciFi’s chief SciFientist, showed us?"

"Those thin little jobbies? I thought they sounded very pleasing — and, of course, they looked like nothing else."

"Hey, Mike was looking for suggestions for names for the product. Have any ideas?"

"Hmmm. Maloney Sandwiches, maybe?"

"Maybe not."

"Muse had no trouble finding a moniker for their new subwoofer, the Model 22."

"When you name your subwoofers for their 3dB-down round-sound processor and a pair of stacked Runco 980 projectors with Faroudja line quadrupler. No other demo at the Show, Home Theater or otherwise, was nearly as ambitious. Only the JBL/Runco room challenged Wilson for the longest lines waiting to get in. The Wilson room was the best-sounding Home Theater setup I heard at the Show, though it was less astonishing than I’d expected, given the price. I have the suspicion that the huge room and huge audiences kept it from reaching much more than half its sonic potential.

Wilson Audio also introduced (but did not play) a new array of Home Theater loudspeakers for delivery in August. Suggestions that it be called “Half-WITT” are likely to get a We-Are-Not-Amused response. —RD"
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"It seemed to be doing a fine job. I thought the bass in their room was tight and tuneful, where the subwoofer was workin' it, but above that it was less good."

"Oh, that's just because you didn't like that Grateful Dead cut they were playing!"

"Dislike? may be too strong a word. How about 'loathe'? I enjoyed playing my own selection in there quite a bit, thank you."

"Too bad we can't pack a subwoofer for our hotel room system."

"We could. but would you want to schlept it to the Show. and then back home?"

"No way. But we could get some of those cute little White Labs B-80 monoblock amps."

"I loved those! It was just so cool that they could toss us each an amp. We could almost juggle them."

"Juggle? Speak for yourself. Amazing that they get so much power into such a small box. It'd make our room system rock even more than it already does."

"They were playing their TBD amps in the room, and they sounded tip-top. If there's a family resemblance in the B-80s, it could be just the thing for our home-away-from-home system."

"In the Shun Mook room, the monks of Mook didn't do the usual with/without demo of their Mpingo discs this time around."

"They may have been more interested in showing their new speaker, the Bella Voce. I think the speaker comes with three discs per, too. Pre-tuned?"

"It was highly musical. Even with the inexpensive Pioneer CD player... though the internal tuning, of course, makes it a considerably less inexpensive CD player."

Like the Wilsons, this is a D'Appolito design, and sells for $1200 each. **Genesis** also had an impressive setup in a small room, using a pair of their new three-way, four-driver 400s at $4000/pair, three of the small, pyramidal-shaped, dipolar 700s ($1500 each) for center and surrounds, and a pair of 800 servo-controlled subs ($8000/pair). Very promising sound; I would have liked to have heard this system in a larger room. The only real drawback: bright movie soundtracks (and the Jurassic Park I heard there is a prime example) badly need the soft, slightly lower-quality resolution of Pro Logic, plus, often enough, some sort of cinema EQ (such as THX's re-equalization), to sound well-balanced in a domestic room. The **Audio Research** surround-sound processor Genesis was using has neither feature, and *Jurassic* was unlistenable bright at high levels in that small room. The Eagles' *Hell Freezes Over* concert laserdisc sounded vastly better.

**Linaeum** had a sweet-sounding presentation, probably the best sound I heard in one of those prefab, convention-floor boxes the CES fobs off on exhibitors as “soundproof rooms.” The all-new models on demo were the Model 10 ($2500/pair), the Model 11 ($1500/pair, used as surrounds), and the Center Channel ($1200) — the latter a real conversion piece of industrial design. No sub was used, and the amp was tube designs from **Quicksilver**. Great picture, too, courtesy of a **Runco** 980 with Faroudja quadrupler, rear-projected on a small, 5' wide, 16:9 screen. It made even Congo look and sound interesting.

There were other new Home Theater loudspeakers and amps all over the place. **M&K** had scads of new products, notably the new S-150THX loudspeaker series. **AR** had a whole new line designed by Christie Designs, formerly contributors to Infinity, including a new 97dB-sensitive model, the 312 HO, at $1200/pair — SE fans take note. **Infinity** themselves had a new Compositions Overture series: three models with design concepts similar to those in the Compositions Prelude, ranging from $1100 to $2800/pair. The Prelude remains in the line unchanged except for a price increase to $3400/pair, a 13% jump less than a year after its introduction. (Bad Infinity, bad, bad.)

**Atlantic Technologies** showed an updated System 250, the System 250.1, weatherized for AC-3. Phase Technology debuted a promising new AC-3-compatible series, not yet named. **Mirage** and **Energy** each had a bushel and a peck of new loudspeakers, including a new MBS-2 ($600/pair), a larger version of the versatile MBS bipolar design.

Whew. I just ran out of space, and I haven't even commented on new Home Theater amplifiers (two new models from **Classé**) and a three-channel version of the **McCormack** DNA-0.5, in particular, caught my eye. Somehow I think I managed to see almost everything, but there was such a sensory overload that I have to apologize to those not mentioned. If I carried away one impression from this CES, it's that both high-end audio and Home Theater are alive and kicking.

— Thomas J. Norton
“Creek” had an interesting and cool item, the OBH-10.
“The remote volume control add-on, yeah!”
“Oh, you could use it as a one-input passive preamp.”
“For that truly minimalist system.”
“It didn’t seem to be hurting anything in the Creek/Brichladdich system. In fact, I’d say that’s the best sound I’ve heard yet from their setup, which doesn’t change much from Show to Show.”
“It couldn’t have anything to do with that fine Bruichladdich Scots whiskey that Roy Hall poured us a taste of, now, could it?”
“No. At least I don’t think so. Hey, it was just a wee nip!”
“No, you’re right, I agree.”
“For a minute, I thought that ATT-S and ATT-Q passive attenuators from WAVAC Audio Ltd. were also remote-control volume devices, but they weren’t.”
“Nope, they work the old-fashioned way — you get up and turn the knob. They also have five inputs per.”

LARRY GREENHILL

Arriving at Las Vegas this year was an eye-opener. I rushed from the airport to the Golden Nugget Hotel for a late-night Stereophile editorial briefing. The cab screeched to a halt two blocks from the hotel with minutes to spare. The cop’s scowling face made it clear the cab would get no closer to the hotel. There was nothing to do but run. As I neared the Golden Nugget, I heard “Happy Trails” blaring from outdoor speakers. Looking up, I saw a huge curved screen over my head showing silhouette horsemen moving against a brilliant desert sunset. I had stumbled into Las Vegas’s outdoor sound-and-light show, the “Fremont Street Experience,” which shuts down traffic every night for 10-minute periods between 6pm and 11pm.

More experiences were to come — a five-storey hot-air balloon shaped like the pink Energizer Bunny floating slowly out of the Sahara Hotel parking lot; a full-scale Egyptian Pyramid at the Luxor Hotel projecting a brilliant light straight up into the jet-black Vegas night; and being told that the full-scale pirate ships that do battle in front of the Treasure Island Hotel sink several times a night. I finished the Show by racing back East on a red-eye flight just ahead of the Blizzard of ’96, and landing just before they closed all the New York airports.

What I saw in the audio exhibits fits right into the outdoor Vegas scene. My brief was to cover subwoofers and tuners, and what JA and WP termed “Messellaneous.”

Because of their key roles in home theater systems and car audio, subwoofers were everywhere. Wilson Audio Specialties introduced the Show’s tallest subwoofer, the “XS.” Two of these refrigerator-sized subwoofers flanked the screen in Wilson’s $600,000 Home Theater exhibit at the Convention Center. Waiting in line outside the room, I heard powerful deep bass coming from the room. Inside, the bass was less overpowering, because Shawn Murphy, the famed movie recording engineer (Jurassic Park, Apollo 13, Patriot Games, Clear and Present Danger, and Home Alone 2), had balanced the sound. Wilson used his huge home theater to show movie segments from Jurassic Park, Home Alone 2, and Apollo 13. The subwoofers roared to life during the Saturn rocket liftoff sequence from Apollo 13. Though the sound pressure levels were high, the reproduction of the rocket was natural, clean, and not oppressive. Wilson explained later that the XSS’s two 18” woofers show only a 3⁄4” excursion during that liftoff scene, despite their rated peak-to-peak excursion of 2” and power handling of 700W continuous.

Scientific Fidelity pushed the Vegas subwoofer extravaganza even further with their 1500-lb “Beast,” part of their full-range “Hi-Squared Beauty and the Beast” system ($98,696). Designer Mike Maloney selected granite for the subwoofer because of its “inert” qualities. I know what you’re wondering — how did they move it? Mike hired “five big guys with refrigerator dollys.” Emerald-colored granite sheets, 1⁄2” thick, are attached to the subwoofer cabinet with Black Magic adhesive. The sub’s 24” drivers (one each per channel) have 2” exciters, and are mounted in 12ft3 ported cabinets with a system resonance of 18Hz. The left- and right-channel cabinets are joined on top by a single piece of granite, resulting in a subwoofer credenza 2.5’ high, 2’ deep, and 8’ long. The “Beast” is sensitive, rated at 100dB/W/m. Due to a late granite delivery, Mike could not show a working version.

Acarian Systems’ Carl Marchisotto introduced the Poseidon Subwoofer ($15,000, available April). The twin-cabineted subwoofers (two cabinets per channel) use a double isobarik array. Each cabinet has an external and an internal driver, each using cobalt magnet structures. Each channel’s cabinets are stacked with external woofers facing each other across the inter-cabinet boundary. Marchisotto believes that the compression of the air by facing woofers produces the most natural bass. Carl set his system crossover with the low-pass at 40Hz, using a modified Dahlquist LP-1 (better jacks, better capacitors), which he originally designed for John Dahlquist in 1975. This room was the first that I visited that was playing only LP’s — no CD’s! The overall system, playing Janis Ian’s Breaking Silence, featured some of the deepest, cleanest bass I heard at the Show.

Velodyne Acoustics was showing two new products, the F-1800 ($1999) and the new High Gain Series (HGS) subwoofers (price not determined at Show time). The F-1800 is Velodyne’s first 18” sub with driver, crossover, and servo amplifier in one cabinet. The F-1800 features a 300W servo amplifier, an 18” driver with 1⁄2” linear travel, a passive high-pass crossover set at 85Hz, and an active-adjustable low-pass, 40-100Hz. Its remote controls gain, phase, low-pass frequency, and power. Velodyne designed the HGS Series to provide subwoofer power in a smaller package than either their “UL1” or “F” series. The HGS series is available in 10”, 12”, and 15” drivers.
“The WAVAC SE triode amps looked very retro-future-cool, with that laboratory glass surrounding the tubes, giving them a museum-display-case ambiance.”

“Or maybe like Mr. Peabody’s WAVAC machine?”

“Settle down, Sherman.”

“I was looking at their literature, and they were waxing poetic. I managed to memorize it, in fact, let me recite it for you: ‘Farmland through the window / The breeze sways trees / Dance of lace curtain sweeping old furniture’

with downsized enclosures, and features integral LED display for remote functions, aluminum servo-controlled drivers. DSP signal processing for control of all operating functions (including room equalization), and an off-line transformerless tracking-power-supply amplifier that is a lightweight, stable, and cool power source.

Miller & Kreisel Sound Corporation introduced their new MX-150THX powered subwoofer ($1995). This box features a long-throw, magnetically shielded driver rated to perform down to 20Hz, and a 150W RMS internal power amplifier with a “headroom maximizer” circuit that prevents woofer overload. It contains a fixed 80Hz, 24dB/octave Linkwitz-Riley low-pass filter. The rating price that a single MX-150 is certified to THX standards when used in rooms up to 3000ft³. This system performed well playing “Gnomus” from Jean Guillou’s pipe-organ recording of Mussorgsky’s Pictures at an Exhibition (Dorian DOR-90117).

Though few FM tuners were in operation at the Show, Onkyo did introduce its T-431OR RDBS model. It features 30 presets, battery-free memory backup, and a two-mode precision reception system that monitors signal quality and chooses optimum settings. The news here is the inclusion of the Radio Data Broadcast System (RDBS). The RDBS technology, standardized by the National Radio Systems Committee in January 1993, allows broadcasters to transmit radio text and commands as digital data on an inaudible subcarrier. CEMA (Consumer Electronics Manufacturers Association) announced the availability of a Radio Data System encoder that allows one to see a display of the call letters of a station, program format (jazz, pop, classical), song titles, artist names, and traffic bulletins. This was displayed at the Convention Center as part of the CEMA’s “Wall of Radio.”

The impact of RDBS on the serious FM radio listener remains to be seen.

Rotel announced two surround-sound FM tuner/preamplifiers, the RTC-970 ($800) and RTC-985 ($1499), suitable for a central audio/Home Theater system. Both units feature a DB25-style multipin receptacle for easy connection of an outboard decoder for any of the 5.1-channel discrete digital formats (Dolby AC-3, DTS, etc.).

Fanfare displayed the FT-1 ($1995), an analog FM stereo tuner that SS praised in June 1994 (Vol.17 No.6, p.147). President Mary Southcott mentioned that improvements in the tuner’s performance had been realized since the review, partially the result of new quality-control methods.

Audio Alchemy announced the Rolsyn 1, a computer-controlled pure DC power supply, at a suggested retail price of $259. It utilizes a nickel-cadmium battery pack to provide sufficient power to operate many of Audio Alchemy’s products (DACman, DAC-in-the-Box, DDE v1.1, VAC-in-the-Box, DTTI+Plus, EDI v1.0, DLE, DDT, HPA v1.0, etc.). This approach can allow portability and provide pure DC power, which can result in better recovery of “low-level bass and midrange detail,” claims AA.

Chase Technologies’ Bob Rapoport introduced the Chase RLC-1 ($399), a wireless remote-control system for non-remote-equipped stereos; it controls volume, balance, mute, and input switching. The RLC-1 connects through the tape monitor, and can even serve as the main control center, replacing the preamplifier, because it has four line-level inputs and two main outputs. A power on/off controls a 500W relay for central AC control.

Miller & Kreisel Sound Corporation plans to release their at 1975 vinyl recordings on CD. These include the Robert Wagner Chorale’s Encore (M&K RealTime, Direct-to-Disc RT-110, which included “Dry Bones,” used by HP at TAS to test phone overload in preamps; and “Danny Boy,” a lilting choral work with some of the best imaging I can recall on vinyl. For subwoofer addicts, few records plumbed the nether frequencies as well as the 45rpm M&K Bottom End Musical Bass & Transient Test Record (M&K 10016). Subwoofer delights on that record included the canon crescendo from the 1812 Overture, a pipe organ, flamenco dancers, and, for hopelessly lost bass freaks, a steam locomotive.

The room of speaker manufacturer Richard Shahinian continues to be a highlight of my CES visits. At 6pm at the Sahara bi-level, when most displays close, well-known recording engineers, audio writers, and music lovers assemble in Richard’s room to listen to music (not equipment), and to him. The door is shut, and Richard opens his huge collection of classical and operatic CDs. Using his Compass loudspeaker, an omnidirectional design, Richard engages the audience in a spirited dialog about music, recording techniques, the current state of opera, and other topics. He is charismatic, commanding, and completely knowledgeable. No one would want to take “center seat” and demand that his own pet test recordings be played unless the music, not the audio, were magnificent.

This year, one well-known producer asked Richard if he wouldn’t like to teach at Juilliard. He then asked Richard to critique his latest piano recording. Richard listened with his eyes closed, grimaced, sang with the piano, and then suddenly held up his hand. He announced that it was too close-miked — “You shouldn’t hear the hammers strike the strings!” He reached into his suitcase and produced a piano recording with a perspective he favored. Then he brought out his current favorite CD, a new recording of Elgar’s Violin Concerto by a young artist named Takezawa, and explained why it was a wonderful recording. For me, Dick Shahinian’s room had the most involving music of the 1996 WCES.

—Larry Greenhill
maybe you should go over the stuff from Joly.”

“Why, what did they say?”

“I’ll give you an example. For their car speakers, or HI-END Audio Boxes, as they call them, they claim that for old-aged people, frequent listening will make them out of old-aged insanity.” I showed that to J. Gordon Holt, and he figured maybe he oughta get a pair, just in case.”

“He’s a crazy dude, but in a good way. Anything else good from Joly?”

“Well, they also said that ‘… the JOLY Speaker has been proved to be able to return hair to its original, pliable state within three months… After six months the hair shall become fine and soft.’”

“Sounds like a serious threat to the conditioner business.”

“Power conditioners?”

“No — hair conditioners.”

“Right.”

“How ’bout our trip to the Las Vegas Convention Center? Talk about overload!”

“Small wonder we unaffectionately refer to it as ‘The Zoo.’ You could spend days wandering through there, just marvelling at the glitzy displays and chatting with the lovely spokesmodels. I didn’t feel we got much accomplished there, though, with the mainly static displays.”

“It saddens me a bit to see so many high-end audio companies exhibiting there. One of the things I love about the audio world is the community and the camaraderie. It comes across at the Sahara. The Zoo doesn’t feel like it has much to do with music.”

“Well, I think it’s more about chasing the almighty dollar. That’s what this Show is for, after all. These people are trying to sell product to dealers. Remember, even though we’ve been coming here for years before we were official, it’s not a public show. Maybe the more these companies sell, the better it is for audio in general. It’s a different approach: ‘Come See N.E.A.R., Mirage, Energy, Proceed, Parasound, and XLO do battle with the Japanese Giants!’ ”

“That’s a tough row to hoe, and I wish ’em well. But it’s just not much fun over there. A lot of them aren’t set up to actually demo their stuff. And even those who are, sometimes won’t!”

“Kinda weird what happened at Marantz when I asked to hear one of their demos, huh?”

“Yeah, I’m sorry, Sir, but we’re only letting dealers actually hear the equipment…”

“ ‘This excludes the audio press!’

“ ‘Yes, sir. We can’t let you hear our products.’

“ ‘Hmmp… Go forth and figure.’

“After all of that abuse, it sure was nice to step into the dark and quiet recesses of the Sennheiser booth and listen to the Beach Boys and Ali Farka Toure on their flagship Orpheus headphone system.”

“Like a little oasis.”

“And what a pleasure to wake up the next morning to the dulcet tones of Larry Archibald’s voice on a local morning-guys radio program.”

“Hah! They were impressed with his professionalism. He wowed ’em by not needing headphones. He is an audiophile, after all. He must’ve wanted to hear the live room mix.”

“And we got some insight into what the major benefit of DVD will be for the consumer. They won’t have to pay a rewind fee when they return them to Blockbuster.”

“We heard it there first. Of course, the DVD video demonstration was inspiring at the Pioneer press conference.”

“Unfortunately, we still don’t have any definite word as to what it’s going to mean for audio. We’ll have to continue to hold our breath.”

“The vanguard of digital audio was alive and well at the PopeMusic press conference, though. The 3-D glasses they gave all of us for viewing their posters were way cool.”

“And they got some nice music from the Balanced Audio Technology stuff and Von Schweikert Research VR-4s. Very good for a very-last-minute setup.”

“Did you notice the word ‘Schnittke’ being whispered throughout the Show?”

“Didn’t we hear Pope’s Schnittke recording in the BAT room?”

“Gee, I don’t know, uh… Oh, you mean Balanced Audio Technology! Yes, the sound was most captivating coming through the ESPs. They were using the VK-60s, right?”

“Uh-huh. Their new VK-500 solid-state dual-mono monster amp seems very promising for the power-hungry. I’d love to hear that.”

“Thiel’s little party in their room was quite enjoyable. That’s the one where we helped them in their struggle to open their wine.”

“We aided them in their struggle to drink it, too, if I recall correctly.”

“Fine it was. And their system had the uncanny ability to
make the listener feel the music was coming from behind.

"Right. That was 'cause the listening chairs were facing away from the speakers."

"No matter, they were well-represented all over the rest of the Show in more orthodox setups, and I have a feeling they turned their own chairs around during the day, too."

"They had to face the music sooner or later."

"Wilson Audio's press breakfast was another pleasant little gathering, wasn't it? Those looked like some bitchin' home theater speakers."

"Dave Wilson doesn't do things halfway. Like with his new XS 7 subwoofer with 104dB sensitivity. Like Dave said, 'There's not enough sensitivity in audio anymore.'"

"It brought a tear to my eye…"

"Then we got misty again at the Stereophile party, when Audio Power's Les Edelberg gave all the credit to Guy Hickey and all of us on The Audiophile Network for making it possible for his Power Wedges to earn 'Accessory of the Year' honors."

"What a sweet guy. JA got the crowd laughing when he pointed to Bob Graham's cast and remarked that it was the only Graham arm that had ever broken."

"And we all laughed again when Bob complained about JA stealing his only joke."

"Dave Wilson was the perfect capper, when he accepted his awards for 'Component of the Year,' 'Loudspeaker of the Year,' and 'Editor's Choice' for his X-1/Grand SLAMM."

"It was quite moving when he tipped his hat to J. Gordon Holt for starting the whole thing, and thanked all the component makers for making his speakers sound so good."

"He's a great speaker who makes great speakers."

"And what a party it was. Everyone in audio was there."

"Rivaled only by the Mondial Jam."

"Stereophile had a lot of guys up there on the bandstand. We had the M&Ms — Michael 'Mick' Fremer and Muse 'Kruise' Kastanovich — singing leads, Kristen 'Wailin' Weitz providing backing vocals, John 'Jah' Atkinson on bass, Steven 'Rolling' Stone on guitar, and Bob 'Rockin' Reina pounding away on keyboards."

"The best party of all, natch, had to have been our own little soirée, when we were joined by Muse Kastanovich and Steven Stone to hear Steven's live DAT masters and CD-RLs of Richard Thompson, Dave Alvin, Joan Osborne, and just about everyone else."

"Steve is the DAT master, and our transportable room system never sounded better."

"The scotch-and-cigar party we had last night at the Rio is my favorite new tradition."

"That cigar terrace was way cool. What'd we have, about 20 people or so?"

"Must've been more than that."

"Maybe so. And I have a feeling that it's only going to get bigger and better at future Shows."

"Yeah. I've got my travel humidor packed already."

"It's the best part of the high-end audio world, to experience the community among similarly afflicted music lovers. To share the fine spirit over some fine spirits."

"It makes it worth it, even having to write a Show report and all."

"YOHHH!! The Show report! We've gotta figure out how we're gonna do the thing. Got any ideas yet?"

"Not a clue. But we'll think of something…"
You can spend more money! but you cannot buy better electronics.
Classé Audio, Inc. shares a dream with its clients - the true re-creation of a live performance. Our devotion to the creation of audio and home theater products of impeccable quality is an approach that an audiophile magazine recently called “a combination of art and science (that) exemplifies the best that high-end audio has to offer.” This remarkable achievement is reflected in our worldwide reputation for unsurpassed musical performance, reliability, consistency, and overall value. Classé’s philosophy is one of technological evolution, not revolution. Building on what we know works.

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* All models are available in satin black or soft shadow silver finishes
"Knock, knock.
Who's there?
Knock, knock.
Who's there?
Philip Glass.
"Philip Glass's music is, of course, famous for its repetitive structures, at once instantly recognizable and ingrained in the collective consciousness of music lovers worldwide. His operas, symphonies, string quartets, concertos, large-scale theater pieces, popular works, and film scores rank him as one of the most important American composers of the 20th century. His latest release, La Belle et la Bête, is an opera based on the 1946 film by Jean Cocteau.

"I've been listening to La Belle quite a lot recently. I rented the movie and played the piece at the same time, like you did when it was performed live. Will you be releasing it like that on laserdisc?"
"We can't, Rick. We don't have the rights."
"It wasn't easy to sync up, but it was worth the trouble. It's great!"
"Well, good."
"Could we listen to some of it here?"
"How about this instead, Anima Mundi? Do you know this piece?"

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come over, let’s take a look at this,” and we usually get the high-end stuff. Everybody knows what it is, it’s not a big secret. You know. I like Aiwa or Sony, and I think the Bose system is very good. I don’t get into hairsplitting and ‘this is better than that.’ That’s a lot of baloney. Of course, for the people who read your magazine it might make a big difference…”

“Yes, it does.”

“But you know, when you’re putting together a high-end sound system, you’re gonna get good stuff. It has more to do with how much you’re willing to pay, doesn’t it?”

“Partly. A lot of it has to do with how you match components too, how it’s put together.”

“That’s what Kurt’s good at. Our system downstairs here is very well-organized, but for upstairs… well, this one here is the optimum one.”

“What do you use upstairs, Phil?”

“Come on up, I’ll show you… Here in my library, this is what I listen to in the evening, this little Aiwa system. This is up. I understand your father owned a record store, yes?”

“Oh yes, I’ve been in the record business since I was 12. I began working for my father then, when the business was 78s. In those days we had — these are archaic things — the 5% return privilege for broken records. That was the standard. What we did, if you didn’t have broken records, you used up your 5% with records you wanted to return. My first job in the music business was going into the basement of my father’s store and jumping on records! We put the pieces in boxes and we shipped them back. Then we discovered we could buy up other people’s 5%. We were buying and selling broken records from all over the South. It’s a very odd chapter in the record business, but that was it. My father was the king of the return privilege. Then LP’s came around.”

“I love it. Did you have a good sound system back then?”

“No particularly.”

“No?”

“I guess I did. My father built the stuff. In 1947 we had the first television set in Baltimore, because he built it. In the

ONE COULD ARGUE FOR A CERTAIN QUALITY OF RECORDED MUSIC THAT DOESN’T HAPPEN IN LIVE MUSIC.

fine, you can buy this thing for $250. Then, in my actual studio, there’s an electric pencil sharpener and it’s the only electrical thing in the room. I don’t require anything for writing music.”

“You must have listened to a lot of music when you were growing

A PHILIP GLASS DISCOGRAPHY

Akhnaten (1987), Sony Masterworks M2K 42457
Anna Mundi (1983), Electra Nonesuch 79239-2
Dance Nos.1-5 (1988), Sony Masterworks M2K 44765
Dance Pieces (1987), Sony Masterworks MK 39539
Einstein on the Beach (1979), Sony Masterworks M4K 38875
Einstein on the Beach (1993), Electra Nonesuch 79323-2
The Essential Philip Glass (1993), Sony Masterworks SK 64133
Glassworks (1982), Sony Masterworks MK 37265
Hydrogen Jukebox (1993), Electra Nonesuch 79286-2
In C (1993), Sony Masterworks SK 46352
Koyaanisqatsi (1983), Antilles/Island 422 814 042-2
La Belle et le Bête (1995), Electra Nonesuch 79347-2
Lino Symphony (1993), Point Music 438 150-2
Mishima (1985), Electra Nonesuch 79113-2
Music in 12 Parts (1989), Virgin/Venture 91311-2
Music With Changing Parts (1984), Electra Nonesuch 79325-2
North Star (1977), Virgin 92010-2
1000 Airplanes on the Roof (1989), Virgin 91065-2
Passages (1990), Private Music 2074-2-P
The Photographer (1983), Sony Masterworks MK 37849
Pouraviant (1988), Electra Nonesuch 79192-2
Satyagraha (1985), Sony Masterworks M3K 39672
The Seven (1992), Point Music 452 968-2
Solo Piano (1989), Sony Masterworks MK 45576
Song from Liquid Days (1985), Sony Masterworks MK 39564
Song from the Trilogy (1989), Sony Masterworks MK 45580
The Thin Blue Line (1989), Electra Nonesuch 79209-2
Two Pages… (1994), Electra Nonesuch 79326-2

“Im very happy with this sound system.”

“Yeah? How do you mean?”

same way, he made his own stereo stuff, and for speakers we got, oh, whatever was in the store. The trouble with that is, you tend to get the things that don’t sell, so you may not have the very best. But that wasn’t an issue. Before Mr. Fisher invented ‘Hi-Fi’, I don’t think people thought about it…

“And now I play in his concert hall at Lincoln Center. [laughs] I was in the store from a very early age and Baltimore, in those days, was a blue-collar town. We sold a lot of hillbilly music, what you’d call country & western today. My father used to bring home the records he couldn’t sell, which were mostly classical. He became a great lover of esoterica, things like — remember we’re talking about the 1940s — Shostakovitch string quartets, Bartók, and even the Schubert piano trios. Not normal fare for record buyers. So I ended up with a very refined library of music at home, but downtown I could hear everything else. In a way, if you look at my life now, it’s not that different. My connection to the world of music is still as broad as it was when I was a boy, and it’s probably for that reason. In the same way, I understand the business of music from a very early age.”

“And nowadays, do you listen to a lot of live music?”

“I’m more likely to hear live music than recorded music, but the whole debate of live vs recorded is an interesting discussion, too, because one could argue for a certain quality of recorded music that doesn’t happen in live music.”

Stereophile, April 1996
"Well, when I recorded the Low Symphony, I could present it in a way you're never gonna hear it in a concert. There's more detail, there's more definition of line, in the recording than you'll hear in the live concert. Is that better? I don't know. It's different, it's different."

"I suppose that for you, if it's closer to what your concept of..."

"You know, Rick, there are different kinds of concepts. There's not one ideal concept, there are different ones. If I hear the music live, I'm getting one thing. If I hear it recorded, I want to be compensated for the loss of 'liveness.' I can compensate for that by clarity and by balance in the inner voices, by being able to hear an English horn entrance which would have got lost in the live performance, things of that kind. And so, you can make a strong argument for a finely recorded piece of music. You'll hear it in more detail and without some of the distractions of the concert hall. But then again, I'll always go back to the concert hall, finally."

"I noticed the music you played here was pretty loud, and it's kind of the same at your performances..."

"With acoustic music I don't, of course, it just is what it is. But, uh, actually, I played that loud to impress you. I do tend to play music loud, though. I play it a lot louder than most people."

"I assumed it was sort of in character for you, Phil."

"Was it uncomfortable?"

"No, no. The thing was, it got me thinking... many of your performances are, let's say, on the loud side, and the hall will reverberate. Does the resonance of the hall, is that part of the...?"

"Well, it changes from hall to hall. I just did La Belle for 90 shows in 50 cities. That's 50 halls! They'll throw anything at you. The other thing is that when I go into a hall and look at it, I don't know what it's going to sound like. I can tell in Europe. There's a European concert hall which is so standard now, the Italian concert hall with the dome on the top, I know what that sounds like, but I'll go up to Roy Thompson in Toronto, that's a good hall, but the old Massey Hall is better."

"I find it a little perplexing that people like yourself, musicians who certainly care a lot about their music — I'm surprised that they're not necessarily audiophiles."

"The reason I'm not is that we go through so much equipment. I mean, you get good equipment, you get bad equipment, you get good halls, you get bad halls. I remember the good pianos I've played. I can tell you what halls have the bad pianos. There's a big lump in the middle which is all the same. There are the terrible experiences and the wonderful experiences and that's all you remember. It's kind of like sex, isn't it?"

"Well it is all just reproduction."

"I'm very happy with this sound system. Kurt said to me, 'I'm going to make something really nice for this house.' But a lot of the stuff, like for example analog is digital, it's an academic question for me. I simply don't have the choice. Digital is what I'm working with. For someone who's an audiophile, who gets pleasure out of finding LPs and playing them and so forth, that's their fun. That doesn't come up for me. Basically, when someone says to me, 'I have to go out and buy a CD player, which one should I get? I will almost always say, 'Look, I don't really know. Why don't you buy a name brand and the more money you spend, the better piece you'll get.' I think that'll be true for Sony, for Aiwa, for whatever American companies. If someone called me up and said, 'Phil, I just spent $800 on speakers,' I kind of know what he bought. If he's bought $200 speakers, I kind of know what he bought. I like my system here, but if someone takes me up to their apartment and says, 'I want you to hear my wonderful sound system,' it's wonderful, but in a certain way, you have to remember, Rick, I hear so much. I hear sound from so many different places. I don't mean to say I'm jaded by it, but there's a huge volume of experience I've been subjected to, which kind of takes the fun out of audiophile-ism. I mean, for me the big fun is writing music."

"What is it you like so much about your system?"

"Well, the clarity. Clarity, depth... clarity is important for me. I look for warmth of sound, which is why you like analog, probably. I like warmth, depth, and clarity. Those are three good things to look for, wouldn't you say?"

"Sure."

"There are probably other things I'm missing, but if I can get warmth, depth, and clarity, I'll buy that. Is that a good summary?"

"I think so. And when you're at home, do you listen more actively?"

"When I'm home, I'm upstairs writing music. The stuff we do at the studio, I may check on the DAT player, so that's important. This isn't high-high-high-end. It's a good system, and it's a good gauge for that kind of thing."

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**ANALOG VS. DIGITAL, IT'S AN ACADEMIC QUESTION FOR ME.**

"I don't require anything for writing music."
"How much just listening for pleasure do you do?"
"Oh, listening for pleasure? That's a difficult thing to say, because I don't listen to music when I'm talking with people, we don't have music during dinner. I've always thought music and romance was a bad combination, because how can you pay attention to the romance when the music is on?"
"See? You do have the makings of an audiophile."
"My best time for listening is when I am alone and I'm cooking, because I'm undisturbed. I'll turn the phones off reading the program. That's what you read when you go home. A few evenings ago I was at Carnegie Hall to hear L'Enfance du Christ, the Berlioz work, and they very obligingly kept the house lights at half so people could read the libretto. I understand it in a way, but what a waste of the experience! I put the program in my pocket and I read it later. I was paying attention to the conductor, to the singers, to the bass entrances, to the balance of the winds. I can't read the libretto and do that."

IF YOU DON'T HAVE HIGH-QUALITY ATTENTION, WHAT'S THE POINT OF A $5000 SOUND SYSTEM IF YOU'RE READING THE NEWSPAPER?

and I'll put on music in here and I'll cook. Or at the end of the day, maybe I'll listen to music. But I don't like mixing music with social activities, I think that's bad, because my mind goes to the music, so I've lost whatever else is going on. It becomes secondary attention."
"Absolutely. I feel the same way, Phil. I can't read and listen to music at the same time."
"Oh, impossible, impossible! Impossible."
"But people do. I think most people have systems which must not be good enough. If they could really listen to something better, they wouldn't be reading, would they?"
"Well, one would think."
"I mean, people don't read the newspaper at a live concert, generally."
"I'm even surprised when I go to a concert and see people

"It just seems like there are so many people for whom music is always just background."
"Well, it's not for us, and for me definitely not. I won't tolerate it. Let me put it this way, Rick: It's not the quality of the system that's important, it's the quality of my attachment. I need to be attentive to the music, and then I can compensate for whatever system is there. I know that's not an audiophile attitude either, but look, the quality of attention is what's important. I would say to someone who is an audiophile, if you have a high quality of attention, then you'll want a good quality of sound because you'll be able to listen. If you don't have high-quality attention, what's the point of a $5000 sound system if you're reading the newspaper? Why bother? You might as well get a cheap set, you know? That's what I think."
If You Can Believe Your Eyes And Ears

CREAM
Fresh Cream
This classic debut album by England's power trio is considered by many to feature Eric Clapton's best guitar performance with the group. Restored from the original British two-track master mixes, this album was originally released in 1966. The original American running order has been restored along with the original album artwork, liner notes and full recording information. Featured are Spoonful, Wrigglin', Paper, The Coffee Song. This classic collection also includes: Feel Free, Gee's Square, I'm So Glad, Rain and many others. LPZ-2015

CREAM
Wheels Of Fire
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Stereophile, April 1996
Art Pepper

New York Album

Songs include: A Night In Tunisia, Lover Man, Straight, No Chaser (alternate take), Doo Blues, and My Friend John. An exceptional quartet date from '79, with Pepper having just established what became a regular working relationship with pianist George Cables, who plays with passion and conviction. He hadn't yet hired a bassist and drummer, so for the occasion Charlie Haden and Billy Higgins were used. Pepper was certainly inspired by what they contributed; his alto sax solos are intense and often jubilant—Ron Wynn. Remixed by Rick Pekkonen and John Koenig; remastering supervised by John Koenig and Chad Kassem. Galaxy $154.
LP=APR 3012 $17.50
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Art Pepper

So In Love

Of the new releases issued under Art Pepper’s name in 1980, So In Love was overall the finest. The altoist stretches out here on a program of standards and blues, backed by alternating rhythm sections from the East and West coasts. Pianist Hank Jones is all one could ask for in an accompanist, and his aching solo on Diane sustains perfectly the restive mood of Pepper’s opening choruses. Overall, the West Coast team (pianist George Cables whose great rapport with Pepper is unmatched, along with jazz legends Charlie Haden and Billy Higgins) powers the music along with great care and economy. Pepper had climbed to such a plateau of individuality that he seems often here to be drawing his unconscious influences into the light and remembering what it was he loved about them in the first place. On a leisurely Stardust, he disrobes his sentiments with the grace and cunning of a Lester Young. The title track, a Cole Porter waltz that agitates into a collective improvisation by its climax, offers the best illustration of the wondrous use Pepper makes of John Coltrane. It isn’t in this case a matter of piling up chords or of playing more notes, as it is with so many others, but rather of drawing on extreme registers of the horn to express more conflicting emotions, to reach deeper and higher recesses of the viscera and the psyche. Remixed by Rick Pekkonen and John Koenig; remastering supervised by John Koenig and Chad Kassem.

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Acoustic Sounds and JET have acquired the spectacular Wilson Audio Custom Tube Mastering facility. The equipment has been installed at JET in California with Bruce Leck and Stan Ricker, mastering. Analogical Productions Revival Series were the first LPs mastered with this incredible system. The beauty of having the mastering facility in the same location as the pressing plant is that the lacquers can be processed immediately. This eliminates any degradation in the lacquer. JET has state of the art pre-plating equipment and produces the best pressings in the world.
Linkwitz with the new Audio Artistry Beethoven
Siegfried Linkwitz was born in Germany in 1935. He received his electrical engineering degree from Darmstadt Technical University prior to moving to California in 1961 to work for Hewlett-Packard. During his early years in the US, he did postgraduate work at Stanford University. For over 30 years Mr. Linkwitz has developed electronic test equipment ranging from signal generators, to network and spectrum analyzers, to microwave sweepers and instrumentation for evaluating electromagnetic compatibility. He has also had a long and distinguished second career as an audio engineering visionary. Along with Russ Riley he developed the famed, and widely used, Linkwitz-Riley crossover filter in the mid-1970s. Since then he has contributed several important technical papers covering a variety of measurement and speaker issues to such publications as the Journal of the Audio Engineering Society, Electronics (Wireless) World, and Speaker Builder.

Most recently, he has joined forces with fellow HP engineer Marshall Kay, CAD (computer-aided design) specialist Kurt Pasquale, and marketing consultant Tom Hoffman to form Audio Artistry. This three-year-old, North Carolina-based company is dedicated to developing and crafting speakers based on the accumulated insights and wisdom Mr. Linkwitz has gained over three decades of loudspeaker research. I spoke with Siegfried about some of these insights and experiences during the course of the Audio Artistry Dvorak, the review of which it found elsewhere in this issue. My first question concerned what had motivated Linkwitz to get involved in audio.

Siegfried Linkwitz: I grew up in a family in which music was very much appreciated. My father and brother played the piano, and although circumstances during World War II prevented me from learning an instrument, I’ve always had a love for music. After graduating from university and joining Hewlett-Packard to design electronics, it was only natural that I wanted to build audio equipment I could use at home, so I got very involved in building power amplifiers, FM tuners, preamps, and you name it—anything electronic I needed to reproduce music. Then I had the fortune of meeting some other engineers at HP who were similarly involved in audio, particularly Lyman Miller and Russ Riley. Lyman was very much into electronic design and making recordings while Russ built amplifiers and had a keen interest in speaker development. They really turned me on to investigating things even deeper, and loudspeakers, to us, were the most interesting and challenging area since so little was really understood about them. The speakers then on the market could certainly be improved, so we saw a real chance to make a genuine contribution.

Shannon Dickson: Could you share with us some of the fundamental problems you and your colleagues encountered during the early attempts to improve speaker performance?

Linkwitz: One of the problems at the time was that good test equipment wasn’t available to us. Russ Riley developed his real-time 1/3-octave analyzer and a pink noise source which we used to make in-room measurements. I bought an early Advent speaker, measured it using the real-time analyzer, and consequently developed an equalizer to flatten-out its frequency response. That was a first attempt on my part. I then experienced a real surprise after we went to some local stores and heard the Electrostatic Sound System’s ESS-7. It just sounded great, much better than the Advent. Naturally, I bought the speaker and took it home, but after measuring it, I was astonished—it measured very poorly! That led to a whole investigation into why it sounded so good but tested so badly.

We found out rather quickly how important driver quality was, as well as the distortion contributions of cabinet resonances. We began experimenting with wool stuffing in the box and with various bracing and panel damping techniques. We found that wool could be a very effective loading material. A number of commercial designs sounded much better when we replaced whatever they had inside with natural wool fiber. In my early designs, we tried two basic concepts built around rather small enclosures, both of which worked quite well. For instance, we made some very rigid, heavily braced small monitors; then we went the other way, using very limp, thin panels for the box construction. These were very easy to damp by applying roofing tar with sand mixed in. As you can imagine, this was a real messy operation—it smelled pretty bad too, particularly if you placed the speaker in the sun. It would out-gas for several weeks before you could tolerate the smell!

While it damped box resonances quite effectively, this approach was not really practical from a commercial point of view, nor would it have been a very welcome addition to most people’s living rooms. But it did demonstrate how important minimizing box resonances is and just how difficult it is to really control this form of resonant behavior.

Dickson: You’ve worked with some of the most respected engineers in audio over the years. Who had the greatest impact on your thinking regarding speaker development?

Linkwitz: I mentioned Lyman and Russ already. Lyman was really into the recording side of things, so he did a lot of recordings on a semiprofessional basis and was particularly interested in capturing sounds as close to their natural origin as possible. So we had some great reference material to guide our evaluation. I learned a lot about recording from Lyman and continued to make many of my own reference recordings, which I used extensively during the development of these new speakers. Russ Riley is a very ingenious design engineer and, on top of it, a superb listener. I was always impressed by how easily he could identify just what the problems were in a speaker and in what frequency range and what one needed to do about them. He had absolutely superb hearing. While not as well-known as some of the other engineers, both Lyman and Russ had a big impact on my early audio career.

THE LOUDSPEAKER DESIGNER AND ALL-AROUND AUDIO ENGINEERING VISIONARY TALKS TO SHANNON DICKSON

Stereophile, April 1996

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Reverend Brown trembled with anticipation as dark cellos entered the room.

To find out more about the diabolically clever design of the LINN 5140 LOUDSPEAKER and for the name and location of your nearest LINN dealer call 1-800-LINN HI-FI.
Through my work in developing test equipment for Hewlett-Packard, I met Laurie Fincham [then with KEF, now with Infinity] and we became good friends. We've shared a vast amount of information with each other over the years, have met frequently, and consequently had some very positive mutual influence on one another. Through Laurie, I was also introduced to a number of distinguished engineers such as Floyd Toole, Stan Lipshitz, John Vanderkooy, and Peter Walker from Quad. I had been following all of these people's writings very intensely all along, so it was a joy to meet them.

Most of these folks have been at my house at one time or another to listen to various ideas I had been working on. In addition, I have been an avid reader of the JAES throughout the years, as well as Wireless World from the UK [now Electronics World — Ed.]. Wireless World used to carry a great deal of high-quality information about audio and speakers; it still does, in fact, though it's not as easy to find these days. Actually, my first publication appeared in 1978 as a lengthy three-part article in Wireless World in which I described the construction of a three-way active speaker system consisting of small satellites and a subwoofer.

In summary, the various influences on my thinking have led to a general approach that is really a blend of the analytical — meaning the measurement of things — and the subjective listening experience, to try to find out what is really going on. If there is a hypothesis of why something works — this way or that — I'll set up an experiment to see if I can prove it or disprove it. In this way, I've always attempted to correlate what we hear with objective measurements — not always successfully, mind you, but at least making the connection where possible. This method will give you a lot of insight into which measurements or artifacts are important and which are not so important. Occasionally, I've found results that look very significant on paper but are barely perceptible, if at all, while on the other hand, some extremely slight irregularities can be very important sonically.

Dickson: Can you tell us what your priorities are in making and evaluating specific measurements?

Linkwitz: I've learned there is a whole battery of measurements one needs to use — and interpret correctly — in order to get a better picture of any given speaker. No one measurement will tell you the whole story. At the top of the list is definitely a loudspeaker's on-axis anechoic frequency-response measurement because this represents the direct sound you hear. However, of similar importance are the vertical and horizontal anechoic off-axis responses. So in my designs, I try to achieve a very well-behaved off-axis response which duplicates the shape of that on-axis, but steadily decreases in level the farther you move off-axis. This is so important in determining the reverberant field and the reflected sound in the listening room.

Another key factor I learned during the development of my crossover design is that, when two drivers are combined in the crossover region, their summed output should be at its maximum on-axis. In other words, the radiation pattern remains stable at the crossover region and doesn't shift. For example, I've found through experimentation that it is definitely audible if you go some distance above-axis and all of a sudden have a maximum peak or sharp dip in the crossover region. This problem is similar to what happens with many large-panel dipole designs. As they produce higher frequencies, their off-axis response becomes more irregular, with peaks and valleys that can color the overall sound and make speaker placement in a given room very critical. If the crossover on any speaker doesn't blend together, you can get this kind of off-axis peak.

Another measurement I look at is the overall frequency response on a half-octave or octave basis, just to see the general trend: whether the treble is rising or sloping, etc. When you look at any response in detail, you never get a flat picture, you always have little ups and downs; but I've found you don't really gain anything by trying to smooth out these small ripple effects in the response. However, how smooth the response is over a third- or half-octave basis is important. I'm essentially looking for an averaged-flat anechoic response.

I do my quasi-anechoic measurements outdoors, with the speakers mounted on a 50° turntable so that the speaker is as far away from any reflecting surfaces as possible, yet still manageable. I try to get 10 milliseconds of undisturbed sound between the initial impulse response and the arrival of the first reflection, which will give me a frequency resolution of 100Hz and useful data for all frequencies above a couple of hundred Hertz. I also try to minimize the first reflection off the floor or ground with acoustic absorbers. But as you can see, this method really doesn't tell you much about the bass.

After my series of anechoic tests, I perform in-room measurements over a 50ms time window. This gives me a frequency resolution of 20Hz, and since 50ms is a pretty long time in a room, it does takes into account the room reflections. I also use 50ms because that is about the maximum time span [during which] the human brain can process the characteristics of a sonic event. Basically, I use these in-room measurements as confirmation of the anechoic results, not to correct for all the reflection anomalies or peaks and dips that show up in the response. I do, however, make these in-room tests from several different locations, and with our new dipole designs, even these in-room measurements over a long time window are surprisingly smooth and flat.

Another test I perform looks for resonances and stored energy in various locations — using a Shaped Tone Burst stimulus, which is particularly well-suited for this. This is a tremendous test signal. I measure the impedance curve of the drivers themselves to reveal driver anomalies, and I also use complex multi-tone signals...
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to test for nonlinear intermodulation distortion artifacts.

Dickson: This is essentially the spectral contamination distortion measurement you are speaking of?

Linkwitz: Yes, exactly, the same concept, in order to find nonlinear problems. Interestingly, in the old days when we used pink noise as the stimulus to try to equalize a speaker to be flat at the listening position in a real room, it typically turned out too bright-sounding. This is an approach that may be useful in a PA setup, but in a listening room it doesn’t lead to a correct result.²

Dickson: Tell us more about the Shaped Tone Burst test you just referred to. I found your article in the April 1980 issue of the JAES (Vol.28 No.2), discussing the benefits of using this stimulus in speaker evaluation, very interesting.

Linkwitz: From a practical standpoint, the advantage of using a shaped tone burst (one that rises and decays gradually in a sinusoidal envelope) is that all of the burst energy is concentrated into a very narrow frequency band. This is quite different from tone bursts used in the past, where you had a rectangular burst covering a fairly wide frequency band. I chose a spectrum width of a third of an octave for this stimulus—which is a 5-cycle burst—because this corresponds closely to how we hear. A third-octave is about the width of the critical band of hearing. Also, because the burst is so short in duration, you mask out the effect of reflections, so it becomes a sort of poor man’s approach to anechoic measurements. As long as you measure the peak of the burst before the first reflection, you’ve essentially captured an anechoic-like basis. This is important when you compare it to FFT analysis, where you get good resolution at high frequencies but very little information at low frequencies. The shaped tone-burst test works on a logarithmic scale so we can get good resolution all the way down to the lowest frequencies. I use this type of test signal to look at the decay of the burst, which gives me the same type of information that you would be looking for in a spectral-decay or waterfall plot that MLSSA can generate.

I also have MLSSA, so I do generate the spectral-decay plots as well, but I have to say, I have not found the waterfall plots very useful except for maybe above 1kHz. Below 1kHz there are so many artifacts in the typical spectral-decay waterfall plot that it is useless. Anyway, it’s simply a lot easier to get the same, and even much more, information out of the shaped tone-burst response. Extending the time record for the FFT in order to get useful low-frequency data is generally not practical; using a narrow burst signal makes it so direct and easy. Plus, you can change the frequency of the tone burst on the fly, while you watch the dynamic changes on an oscilloscope, as the tail of the burst stretches out—in effect allowing you to see directly when you’re close to a resonance!

I guess I’m beginning to sound a little like a missionary for the shaped tone-burst test, but I really do believe it is an extremely powerful technique that is too infrequently employed. Many people are just not aware of how it differs from traditional tone-burst stimuli. Today

[Image]

I've always attempted to correlate what we hear with objective measurements.

² This is because you are equalizing the loudspeaker’s power response, which includes the full contribution in-room of its off-axis behavior. As the power response tends to slope down with increasing frequency with conventional speakers, such equalization will boost the highs on-axis. As a result, unless you are sitting a very long way away from the speakers, the perceived balance will have a strong contribution from the speaker’s direct sound which, after equalization, will tend to be too bright.

Dickson: You’re most widely known as the developer of the Linkwitz-Riley crossover. Could you explain a few of the characteristics of this crossover?

Linkwitz: To answer your question, we need to go back to when I started out exploring the whole speaker issue in the early ’70s. Then you could take the grille-cloth off many of the available speakers and see a strange, almost haphazard arrangement of the drivers on the baffle. It really puzzled me and I wondered what was going on. So I asked some of the designers why they were doing this and they said, “Because we’ve found it sounds better.”

As I looked further into this issue, I realized that two prin-
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principal things were not well-understood. First, very little was known at that time about the effects of diffraction from the cabinet edges. Second, and more importantly, very little was understood about how phase-shift with respect to the current passing through the voice-coils of different drivers affected the polar radiation pattern of a speaker. In other words, the interaction between the electrical side of a driver and the acoustical response was not clear at the time. For example, the phase-shift between the current in the tweeter and midrange voice-coils, relative to the placement of these drivers on the baffle, affects the speaker's radiation pattern.

Basically, since few drivers are really coaxial, with the difference in physical placement—that is, if the path lengths between the drivers and the listening point are different, or even if they are the same—you get a vector addition which is a function of the phase-shift between the different voice-coil currents and the distance between each driver and the listener. So Russ Riley and I began our work, in earnest, to be sure that the drivers were in-phase in the crossover region. This, in essence, is what the Linkwitz-Riley crossover is all about: making sure that you have the same acoustic phase between the midrange/woofer and the tweeter at the crossover.

Dickson: How about the phase relationship outside of the crossover region?
Linkwitz: As it turns out, that same phase relationship is maintained at other frequencies as well. This is very much in contrast to the classical Butterworth crossovers that people use in a number of speakers. An inherent property of the Butterworth design, whether these are first-order, third-order, fifth-order, etc., is that the crossovers are always in phase quadrature. In other words, the acoustical signals coming from the midrange and tweeter are phase-shifted by 90° relative to each other. At its −3dB point, each driver has an amplitude of 0.7, and if you add two 90° phase-shifted vectors of 0.7, you get unity—the outputs of the two drivers add to unity on-axis. However, as you move farther away off-axis, one or the other driver will experience more phase-shift as the path-length difference becomes longer, and you’ll have either a dip or a peak in the amplitude response off-axis.

In any event, the true maximum output of the two drivers will occur someplace off-axis, and this is an audibly bad thing. The peak off-axis response can then reflect from the nearest boundary and combine with the direct sound as added coloration.

Now, a first-order crossover can be made phase-perfect at one point in space, but I feel quite strongly that you cannot just look at a speaker’s performance at one single point in space. The off-axis response is also very important to a speaker’s overall performance in a real room, because the radiation in these other directions will add, through reflected and reverberant interactions, to what you hear. Typically, we don’t listen to speakers outdoors or in anechoic chambers.

For an ideal Linkwitz-Riley crossover, the amplitude is flat on-axis or at unity, just as it would be for an ideal Butterworth. However, the Butterworth response will have its peak off-axis. In contrast, the amplitude of the L-R crossover will be down in level off-axis, and will never be higher than the on-axis response. The crossover point of a Linkwitz-Riley will also be at the −6dB point, equivalent to an amplitude of 0.5, and only when you add vectors with amplitudes of 0.5 that are in-phase will you get unity. If there is any phase angle between these half-amplitude vectors, their sum will be less than unity.

A very important point that people sometimes miss in this discussion is that when we are speaking of a given crossover, we are talking about an acoustic crossover, or what happens acoustically. Now, what I have to do electrically to achieve the correct acoustic response may not look anything at all like a textbook filter design. The actual filter often looks very little like the drawings I may show to explain any given example. This is also true for a Butterworth filter. It is highly unlikely that a textbook electrical Butterworth crossover will produce an acoustic Butterworth response, because the driver’s response enters into the picture as well.

Dickson: There is a general misconception in some circles about differential vs absolute phase effects in speakers. Recently, I’ve heard about some well-meaning but misinformed retailers who arbitrarily reverse the polarity of either the tweeter or midrange hookup wires in all of the speakers they sell that are designed with high-order crossovers, in an attempt to make them “in-

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say that the dipole aspects of the speaker are directional, it's not in a very strong sense. For instance, the response is 1dB down at 30° off-axis, 3dB down 45° off-axis, 6dB down at 60°, and has a null around 90°. The monopole tweeter also maintains a similar directional characteristic because of the baffle design and the wavelengths of its frequency band. Of course, it differs from the dipole drivers in that it fires predominantly forward. The important thing is that the shape of the off-axis room response is very consistent with that produced on-axis, resulting in the opensounding soundstage and the speaker's even tonal characteristics. Also the dipole "figure-8" cosine directivity goes all the way from 2kHz down through the woofer's range to 20Hz. This directional deep bass is really pretty amazing! If you have another person to help you, play some low-frequency tunes, then have your friend rotate the woofer cabinet and you can clearly hear the output null at 90° off-axis!

Dickson: Yes, I've noticed I can hear increased focus in the low bass when I toe-in the woofers. This is one speaker where "stereo" bass may have some real meaning. Two of the Dvorak's sonic characteristics I find most striking are its dramatic reduction of room-induced colorations from the low bass through the midrange, and its ability to convey image height in correct proportion to the width and depth dimension of the soundfield. What factors do you think contribute most to these effects?

Linkwitz: These are primarily due to the dipole characteristics and the even room response. Since the speaker is moderately directional at all frequencies, more of strongly suspect that the erratic off-axis behavior of most panel speakers is what makes their room placement so critical, forcing a person to locate the panels in a place that minimizes reflections and changes how the off-axis sound couples with the room, in order to get a balanced output. On the other hand, quite frankly, I have not found the performance of either the Dvorak or the Vivaldi to be critically dependent on room placement compared to other speakers. There is still definitely an optimal placement in any given room, but you can get very satisfactory performance in a wide variety of locations, so this experience lends further credence to the value of a well-behaved off-axis response.

Dickson: While the Dvorak and Vivaldi represent a somewhat fresh approach to speaker design, they are mature designs. I'm very curious to hear about what projects you have planned for the near and more distant future.

Linkwitz: Recently, I've been doing extensive investigations into numerous drivers using some of the newly developed measurement techniques I alluded to earlier—especially the test for nonlinear distortion artifacts, and those that help locate and define energy-storage effects in drivers themselves. All this in a search for components that have even more clarity and transparency. What I had in mind was to see how much further this Dvorak concept could be refined.

We unveiled our new flagship, the Beethoven, at the recently completed '96 WCES in Las Vegas. In addition to an all-new balanced electronic crossover, each main panel has a new silk-dome tweeter, two new 8" drivers, and a pair of 10" dipole drivers—all low-distortion, high-excitation models. Both of the woofer cabinets for the new system contain four 12" dipole drivers, so obviously this system is designed for high-output, very-low-distortion sound and will be considerably more expensive than the standard Dvorak. I must say we have been extremely gratified with the performance of the new system. So that's one project we are putting the finishing touches on now, and we are also thinking about a smaller, lower-cost version of a dipole speaker in the future.

A little farther down the road, possibly over the next few years, I would also like to settle in my mind the importance of what I would describe as "linear phase." This refers to obtaining a result that is a more accurate replica of the time-domain wavefront. Some people seem to think that this is very important for reproducing clicks and transient-type sounds, and that may well be. From a common-sense point of view, it seems logical that you would want to have a true replication of the wavefront. However, I'm not totally convinced because I have done a lot of experiments with phase-distorted signals. Basically, I've shifted the phase between different spectral components by running various signals through an "all-pass" filter, where the amplitude is unaffected when I change the phase response with frequency. When you look at these signals on an oscilloscope and change the phase, they look grossly different, so you'd think "surely this must sound different." But when you listen, you can't hear...
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the difference, even though the time-domain waveform staring you in the eye looks so totally altered!

I did quite an investigation into this when I initially developed the Linkwitz-Riley crossover because it is not a linear-phase system — nor are the Butterworth crossovers, for that matter, except for the first-order slope. The experiments I've done so far have not convinced me that phase distortion in small amounts is audible. Now if the phase distortion is gross, you can definitely hear it, but the typical crossover is far from producing that much phase distortion. However, some people whom I respect seem to think this is something that could have audible consequences, so I'm keeping an open mind about it and want to determine once and for all its value, if I can. I must say that I have not heard an example of a speaker design that conclusively demonstrates the benefit of a linear-phase system.

Dickson: I imagine when you look at the total performance of a speaker with the various tradeoffs required to achieve a certain goal, you have to weigh their relative merits.

Linkwitz: This is true. You could question, for example, whether the extra stress on drivers and resulting distortions produced by a first-order system are not more audibly significant than the subtle improvements potentially created by its linear phase effects. However, it is possible, using digital techniques, to correct for the phase response as well, and my friend, Malcolm Omar Hawksford [of England's Essex University], who has done quite a bit of work in this area, has kindly offered to perform a phase correction for the first 10ms time record of the Dvorak's impulse response with his digital processor. It certainly would require a bit of horsepower to implement digital phase correction in the active crossover, but it could be done.

Again, it's not yet completely clear whether a digital crossover will buy you anything. It may buy something, and that's the part I'm interested in. For instance, with this scenario we could combine the excellent on- and off-axis amplitude response of the existing Linkwitz-Riley crossover in the Dvorak with an after-the-fact digital correction of the time-domain, to achieve a linear-phase system. You see, the digital time-domain correction would not affect the existing passive or active crossover response at all, it just would correct overall phase. As a matter of fact, at a recent AES convention, both Malcolm Hawksford and I attended a discussion about the use of very steep crossover filters with digital phase correction. Convincing arguments were presented showing that these extremely steep filters produce sonic anomalies, and consequently are not desirable. Malcolm also stated that something like the Linkwitz-Riley fourth-order crossover was about optimum, even digitally implemented, when phase correction is applied. Anyway, I'm very interested to see how this research turns out.

Dickson: With the continual improvement in driver technology and refinements in other areas of audio design, it may be that these more subtle issues, like linear phase, will become more important in the future.

Linkwitz: I think that's a good way to look at it. You could say that you need to have a certain number of other things done correctly first before those effects come into play. I should also point out that the digital phase compensation I'm speaking of is very different from the digital room-correction systems you may have read about. In any event, these are a few of the areas that we at Audio Artistry look forward to investigating and developing in the near future.
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1996 RECOMMENDED COMPONENTS

A Towering Look at the Top Components
by
Larry Archibald
John Atkinson
arnis Balgalvis
Lonnie Brownell
Martin Colloms
Anthony H. Cordesman
Robert Deutsch
Shannon Dickson
Jack English
Michael Fremer
Corey Greenhill
Larry Greenhill
Robert Harley
J. Gordon Holt
Ken Kessler
Muse Kastanovich

Components listed here are ones that have been formally reviewed in Stereophile and have been found to be among the best available in each of four or five quality classes. Whether a component is listed in Class A or Class E, we highly recommend its purchase.

Each listing—in alphabetical order within classes—is followed by a brief description of the product's sonic characteristics and a code indicating the Stereophile Volume and Issue in which that product's report appeared. Reviews that appeared in our companion Stereophile Guide to Home Theater are indicated by "SGHT1 No.1"; i.e., the component was reviewed in the Stereophile Guide to Home Theater, Volume 1 Number 1, which was published in December 1994. (Vol.1 No.2 of the Guide was published in September '95; Vol.2 No.1 in December '95.) Some products listed have not yet been reported on; these are marked (NR) for "Not Reviewed." We recommend that any product's entire review be read before purchase is seriously contemplated (products without reviews should therefore be treated with more caution)—many salient characteristics, peculiarities, and caveats appear in reviews, but not here. To obtain back issues of the magazine, see the advertisement in this issue. (We regret that we cannot supply photo-

Daniel Kumin
Guy Lemcoe
Lewis Lipnick
Peter W. Mitchell
Thomas J. Norton
Russell Novak
Dick Olsher
Wes Phillips
Robert J. Reina
Markus Sauer
Donald A. Scott
Jonathan Scull
Bill Sommerwerck
Steven Stone
Sam Tellig
Stephen W. Watkinson
Peter van Willenswaard
and
Barry Willis
Components, in general, do not remain listed for more than three years unless at least one of the magazine's writers and editors has had continued experience with them. Discontinuation of a model also precludes its appearance.

**How to Use the Listings**

Read carefully our descriptions here, the original reviews, and (heaven forbid) reviews in other magazines to put together a short list of components to choose from. Carefully evaluate your room, your source material and front end(s), your speakers, and your tastes. With luck, you may come up with a selection to audition at your favorite dealer(s). "Recommended Components" will not tell you just what to buy any more than Consumer Reports would presume to tell you whom to marry!

**Class A**

Best attainable sound for a component of its kind, without any practical considerations; "the least musical compromise." A Class A system is one for which you don't have to make a leap of faith to believe that you're hearing the real thing.

**Class B**

The next best thing to the very best sound reproduction; Class B components generally cost less than Class A ones, but most Class B components are still quite expensive.

**Class C**

Somewhat lower-fi sound, but far more musically natural than average home-component high fidelity; products in this class are of high quality but still affordable.

**Class D**

Satisfying musical sound, but these components are either of significantly lower fidelity than the best available, or exhibit major compromises in performance—limited dynamic range, for example. Bear in mind that appearance in Class D still means that we recommend this product—it's possible to put together a musically satisfying system exclusively from Class D components.

**Class E**

Applying only to loudspeakers and phono cartridges, this "Entry Level" classification includes products that may have obvious defects, but are both inexpensive and much better than most products in their mid-fi price category.

**Class K**

"Keep your eye on this product." Class K is for components that we have not tested (or have not finished testing), but that we have reason to believe may be excellent performers. We are not actually recommending these components, only suggesting you give a listen. Though the report has yet to be published in certain cases, the reviewer and editor sometimes feel confident enough that the reviewer's opinion is sufficiently well-formed to include what otherwise would be a Class K entry in one of the other classes, marked (NR).

In addition, though professional components—recorders, amplifiers, monitor speaker systems—can be obtained secondhand and can sometimes offer performance that would otherwise guarantee inclusion, we do not generally include such components. Apart from that exception, Stereophile's "Recommended Components" listing is almost exclusively concerned with products currently available in the US through the usual hi-fi retail outlets.

**How Recommendations Are Determined**

The ratings given components included in this listing are predicated entirely on performance—its accuracy of reproduction—and are biased to an extent by our feeling that things added to reproduced sound (eg, flutter, distortion, colorations of various kinds) are of more concern to the musically oriented listener than are things subtracted from the sound (eg, deep bass or extreme treble). On the other hand, components markedly deficient in one or more respects are downrated to the extent that their deficiencies interfere with the full realization of the program material.

We try to include in "Recommended Components" every product that we have found to be truly excellent or that we feel represents good value for money. Bear in mind that many different tastes are represented. The listing is compiled after extensive consultation among Stereophile's reviewing staff, editors, and publisher, and takes into account continued experience of a product after the formal review has been published. In particular, we take account of unreliability and defects that show up after extended auditioning. The fact that a product received a favorable review cannot therefore be regarded as a guarantee that it will continue to appear in this listing.

The prices indicated are those current at the time the listing was compiled (February 1996). We make no guarantee that any of these prices will not have changed by the time this issue of Stereophile appears in print.

Where we have found a product to perform much better than might be expected from its price, we have drawn attention to it with a special symbol next to its listing: $$$$. We also indicate with a ⋆ products that have been on this list in one incarnation or another since the "Recommended Components" listing in Vol.16 No.4 (April 1993). Longevity in a hi-fi component is rare enough that we think it worth indicating (although it can also indicate that the attention of design engineers has moved elsewhere).

We are not sympathetic toward letters complaining that the Synphonic Bombast A-123 Mk.VIa, which we recommended heartily two years ago, no longer makes it into "Recommended Components" at all. Where deletions are made, we endeavor to give reasons (there are always reasons). But remember: Deletion of a component from this list does not invalidate a buying decision you have made.


**Turntables**

**Editor's Note:** Any audiophile worth his or her salt should (unless exclusively committed to CD) consider at least one of our Class D recommendations—or, preferably, one of the Class C turntables and their variants—as the essential basis of a musically satisfying system. An in-depth audition as part of a preferred turntable/arm/cartridge combination before purchase is mandatory. If an inexpensive turntable has not made its way into Class D or is not listed in Class K, it is highly probable that it is recommended by default. Underachievers are more common in the world of turntables than in any other area of hi-fi.

### A

**Forsell Air Force One Mk.II:** $26,000

Sophisticated two-chassis, air-bearing Swedishtable with thread drive and parallel-tracking, airbearing tonearm. JS enthused over its 3-D image solidity, tight, deep bass, super-plush midrange, and "enormous palpability factor." While MS also recommends the big Forsell, MF disagrees, feeling that the Forsell's horizontally undamped tonearm to be a "canewler killer." Very similar Forsell Air Reference ($14,000) lacks the air-bearing Flywheel drive system, uses an internal motor and a silicone-rubber belt. (Vol.17 No.1)

**Linn Sondek LP12 with Lingo power supply:** $3045 $$$

Compared with the Valhalla model, the Lingo-equipped version minimizes the LP12's propensity for slightly fat midbass, subjectively extending the low frequencies by another octave. The Lingo upgrade alone costs $1450. The Trampolin suspension reduces the effect of the support. Cirkus bearing/subchassis, now fitted as standard, costs $595 inc. labor as upgrade kit, and further extends and tightens the turntable's bass, leading to a Class A rating, according to MC, JA, and LG (as long as...
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The result was breathtaking - a rediscovery of the emotional impact of music. "It digs deep into the music and lays bare its flesh and its soul... Runs rings around everything I have heard, tried, used or borrowed," said British reviewer Alvin Gold about the Ongaku amplifier in Audiophile magazine.

He also said "I shall never be able to afford to buy one." We understand. Construction without compromise is expensive. So Audio Note U.K. was formed to retain Mr. Kondo's objectives and design principles at more affordable prices.

The Conquest amplifier has output transformers and signal capacitors custom made by Audio Note, of copper. It is still a single-ended, zero-feedback Class A Design. It gives you the body and soul of the performance, rather than merely sonic pyrotechnics.

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a good support is used, adds MC. Though CG feels that the LP12/Cirrus loses a certain something that the original version possesses, it concludes that “the LP12 ranks as one of the finest high-end audio products on the market today.” “A deeper, more profound silence,” enthuses WP over the Cirkus mod, adding that what stunned him was “the extent to which surface noise receded,” although he notes that the super-low noise level is not without sacrifice. Excellent speed stability and excellent speed stability reinforces the feeling of maximum musical involvement offered by this classic belt-drive turntable. Good isolation from shock and vibration. While the felt mat doesn’t offer the greatest degree of vibration suppressions, it’s good for avoiding absorption issues and offers uniform with frequency. Despite fluctuations with other decks, JA remains true to the basic design he has used now for more than 18 years. (Vol.14 No.l, Vol.16 No.12, Vol.17 No.5, Vol.19 No.2)

Naim Armaggeddon LP12 turntable power supply: $1100 A 430VA, low-impedance transformer designed to drive the Linn LP12 Basik turntable while isolating it from powerline noise. WP was enthused, citing the improved pace and energetic presentation of the music over his Velalda’s LP12. “The snap and surge of the rhythms that propel the song along were better served,” he asserted. However, this came at the cost of ultimate bass extension — a trade-off that many would not undertake lightly (JA, for one). Highly recommended — MC agrees with WP that the LP12/Armaggeddon is a Class A turntable—but audition before committing your Linn to surgery. (Vol.19 No.2)

B Basis Ovation Mk.II: $5400 This well-engineered turntable combines a high-mass platter, motor and suspension and a precision drive system. According to DO, the Ovation offers awesome bass definition, incisive spatial resolution, and an exceptional feel for recorded hall ambiance. DO’s reference, but WP, though currently using it (and allowing that shift available from Basis) for its superior VTA range. Just fails to reach Class A due to its lack of vacuum hold-down system. (Vol.16 No.7)

Kuzma Stabi: $2200 GL is quite enamored of this turntable when it’s fitted with the Stabi tonearm, proclaiming, “I know of no better way to take advantage of this vintage renaissance than with this superior-sounding, no-nonsense turntable willing and able to convey all of the dynamics, dynamic range, rhythm, vibrato, and sense of finesse that are the stuff of music. And, it’s built to last into the next ice age.” (Vol.18 No.5)

VPI TNT Jr.: $2800 Capable of being upgraded in easy stages to full TNT Mk.III Plus status, the high-mass Jr. uses a simple Navicon suspension and, according to WP, is “absurdly simple to set up.” A “blacker soundscape” than VPI’s popular HW-19, he found, commenting that it had excellent low-bass extension and definition. Trispod pulley system, PLC (power-line conditioner), and flywheel upgrades for the TNT Jr. take it all the way toward full TNT status. (That would require replacing the suspension — an $800 option.) SS found the changes “subtle but pervasive,” particularly lauding the improved soundstaging. Knocking on the door of Class A, West Coast Audio (Vol.19 No.1 & 11)

Well Tempered Classic Turntable: $2495 (inc. arm and Black Damped Platter) An integrated belt-drive turntable/tonearm combination featuring an acrylic platter and a unique four-point wobble-free bearing. Lacks a suspension for the armboard, in an effort to define the image more clearly concerning the maximizing of speed stability and the rejection of motor noise. Most obvious sonic characteristic is stability, both in speed and harmonic structure, coupled with cleaned-up sound quality. “The quiet between the notes is suitably studiously minor. All in all, this has to be the result of addition, dynamics seems to be enhanced, though the sound is more lightweight than that of, say, the VPI. The Black Damped Platter is now standard, and is also available for $330-$440, depending on vintage status. GLC turntable will go a long way toward alleviating the WTT’s weight balance. “It should bring pleasure to a lot of record collectors — borderline Class B,” was his conclusion, though he finds the Well Tempelled Arm’s cartridge clips rather fragile. HP’s long-term reference for the price, Linn’s own Molecular Audio Labs modifications for both arm and turntable: Well Damped Arm Clamps ($299), Micro Suspension System & Motor Terminator Kit ($239, now height-adjustable), and, for those with the old platter, the Reference Interface Mat System ($239), which can also be used on other turntables — see HP’s review in Vol.16 No.4. (Vol.11 No.3, Vol.16 No.4; see also GL’s review of the $2000 Fountinehead turnbase in Vol.17 No.10.)

C Linn Sondek LP12 Valhalla: $2045 The standard against which newer turntable designs have been measured for almost two decades, the Linn is felt by some to be more colored than the other Class C turntables, particularly in the upper bass. Latest version has a laminated armboard and Cirkus bearing/subchassis ($595 inc. labor as upgrade kit), which result in a considerably more neutral sound. Certainly it’s hard to set up and is more likely to go out of adjustment, though with the latest improvements, Transpalin suspension, glued subchassis, and Cirkus mod, it’s now much better in this respect. (Low-bass extension suffers when the LP12 is not set up correctly.) Still sets a high performance standard, found WP — although it can certainly be bettered in one area or another, its balance of virtues is hard (but not impossible) to improve upon. With a $1250 power supply is available for $1690. (Vol.7 No.2, Vol.13 No.3, Vol.16 No.12, Vol.19 No.2)

VPI HW-19 IV: $1850 The Mk.III version of the VPI ‘table (still available for $1250) was cosmetically more elegant than the original, and achieved a standard of sonic neutrality that put it close to the SOTA Star Sapphire — and at a significantly lower price. Borderline Class B. The Mk.IV version is better still, the music arising from a velvet-black background, thought GL, with significantly improved soundstaging and resolution. “Detailed, neutral, calm to set up, and a bargain,” enthuses RJR. An upgrade with a standard Mk.IV platter from older HW-19s costs $750; with a TNT Series 2 platter, the upgrade costs $850; an acrylic armboard for the ET 2 costs $50, while the special 1”thick armboard for the ET 2 when the TNT platter is used costs $120. The HW-19 readily accommodates a wide range of tonearms — the ET 2 air-bearing design, in particular — and is very stable. The $450 Power Line Conditioner (see Vol.12 No.2) is an essential accessory. The 19ETM Mk.III is available in two versions: Standard (Vol.10 No.4, Vol.9 Nos. 4 & 9, Vol.12 No.11, Vol.15 No.8; see also Vol.13 No.7, No.112, and GL’s ET 2 report in Vol.14 No.10.)

D Roksan Radius III: $1200 (without arm) Well-made turntable, and competitive with quartz-referenced motor supply. Minimal suspension consists of three rubber spheres that separate the two halves of the plinth. While not as color-free as the Well Tempered Record Player, the Radius has a better-defined bass register, with the surface noise removed. Also, this turntable is exceptionally well-fashioned. TVL tonearm lacks midband transparency, though CG found that damping the armboard with Sumiko’s Arm Wrap helped enormously in this regard. Works best with Roksan’s own Corsi Black cartridge. Borderline Class C, says KK. (Vol.16 No.6 & 8)

Revel Pro 615D: $500 (inc. arm) Budget deck based on Rega parts, including glass platter/felt mat and robust variant on the Rega RB-200 arm, offers surprising detail, says MF. Spring-mounted feet offer moderate isolation. Check speed accuracy before purchase. MF feels the extra bucks for the Rega Planar 3 are worth it, however. (Vol.18 No.8)

SOTA Comet: $699 (inc. arm) ** Bare-bones belt-drive turntable relies on highs plinth for environmental isolation, but, when used with the Blue Point Special cartridge, captures what GL defined as the “soul” of the music, with an uncolored midrange, excellent detail (except at high playback levels), good depth, but only fair stereo imaging, using the Blue Point Special cartridge. Price includes LMT-III tonearm. Reflex Clamp ($179) an essential accessory. (Vol.16 No.8)

Well Tempered Record Player: $1495 Somewhat hussy to set up, but when done right, the WTRP ‘table/arm combination produces colorful music with a soul; right one, can be fine-tuned by playing with the damping arrangement. Borderline Class C performance with the latest platter, according to CG. (Vol.14 No.7, Vol.16 Nos.2 & 10)


A Clearaudio/Souther Tri-Quartet Improved: $2500 SS felt that the TQI’s assets—elegant design, longevity, resolution, low-level detail, superb soundstaging: delineation, top-end air, and accurate midrange re-creation—far outweigh its relatively minor shortcomings of a reference in the bass and a demanding setup procedure. “Mates synergistically with Clearaudio S-type cartridges,” SS opines. (Vol.18 No.4)

Eminent Technology 2.5: $2000 with standard air pump A longtime MF favorite, the ET 2.5 features a host of ingenious extras, including adjustable VTA during play. More important, it has “an extraordinarily live and open soundstage,” according to AH, and gets the best results from a wide range of cartridges. Very fuzzy to set up and use, and needs a very stable subchassis nitude — VPI, for example — and frequent level adjusting to give of its best. MC also reports excellent performance with the ET mounted on the Roksan Xerxes. Surpassed overall by the Airtrend, and by the SME V, which has as neutral a midrange and significantly better bass definition and resolution. Latest version, the ET 2.5, incorporates a viscous damping knob ($95) and a revised, large-diameter manifold ($400 with return of original manifold) to take advantage of the higher pressure offered by the Airtrend Wiss air system ($75) and increases the damping ($50). The Airtrend pump and tank cost $500 if bought together) GL reports excellent results from this combi-
"Best Sound At Show"

At the Los Angeles HiFi '95 show, attendees cast their ballots for the best sound at show.

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nation on the VPI HW-19, and also recommends the
teclock AI-911 TAN dial indicator ($36.70), for
which ET provides a mounting bracket ($25).
Price without standard pumpp is $1590.
(Vol.8 No.7, Vol.9 No.5, Vol.14 No.8)  
**Graham Model 1.5-T/C; $3000**
Beautifully engineered unipivot design using an
SME-type arborcut that offers inter-
changeable armwalls, a refined counterweight-de-
coupling mechanism, and the adjustment of
VTA to the within-booth tolerance. Superb build
definition, though not as much ultimate weight as
the SME; but astonishingly good retrieval of midband
information due to a very low resonant signature,
exceeding even the performance of the SME in this
category. Stainles-steel cartridge 1.5 cartridges are
gold-molded chrome matte. Basic 1.5 costs $2500.
The “c” version costs $2750 and includes T-2 tungsten-steel
side weights to replace standard brass ones ($250 as
upgrade) and AZ-1 Azimuth Alignment Box ($150 as upgrade).
As well as tungsten-stee-counter-
weights, improved T/C version offers progression-
cast SW-3 ceramic armature ($800 as
upgrade). SS admires its balance of sonic attributes,
it’s ease of setup and adjustment, and its neutrality.
Class A, pure and simple—and the only tonearm
for a high-end to low (and own) tone-arm.
(Cartridge No.9.3 & 8.1 Vol.18 No.6; see also
TNJ’s SOTA jewel review in Vol.15 No.4.)
**Linn Ekos: $2350**
Clean-sounding than the Ittok (upon which it’s
loosely based), the Ekos rivals the SME in overall
neutrality and smoothes the same line that
armature, but with more energetic presentation of the
music. The treble is nevertheless superbly transparent. The
Ekos also provides a much better match with the
Linn LP12 than the English arm, which loses control
of the bass when mounted on the Scottad
counterweight. MC also found the Ekos’s bass to be
more tuneful and “open” than that of the original
Ittok. Azimuth adjustment is not possible. 
Some users have reported long-term problems with the
bass; the sample JA bought has been okay in
this respect. (Vol.12 No.3 & 4, Vol.13 No.3, Vol.16 No.6)
**Naim ARO: $2000 $$$**
“An inner balance and harmony consistent with the
musical message,” says MC of this unipivot design.
MS found the ARO to offer superb
impression, with more detail, dynamics, and rhyth-
mic integrity. He also found it less bright than the
Linn Ekos, and better balanced in the bass than the
SME V. WP concurs, ranking it high among the
arms he’s auditioned, but cautions that the lack of any
overhang adjustment dictates careful care of
armwall, and the ability to drill new arm-
boards with different radii from the spindle for
each new transducer. Additional arm top costs
$1100. (Vol.16 No.6, Vol.19 No.2)
**SME Series V: $2550**
This beautifully constructed pivoted tonearm has
an extraordinarily neutral midrange, with one of
the lowest resonant signatures in this region
(though DO feels the Graham offers slightly more
midrange detail). Easy to set up, VTA and
overhang are adjustable during play, but there’s no
adjustment for anything that DO feels to be
a significant drawback. “The best bass perfor-
mance on the market,” said SWW. LA concurs,
having auditioned the V on a VPI TNT, but JGH,
JA, DO, and LL feel that the whole bass range is
somewhat exaggerated. Not recommended with
this armwall, due to their problems with car-
tidges having low height. A less versatile version,
the IVW (which uses Series V bearings and
Magnet Vi wiring), appears to offer the V’s sonic
virtues and more at a lower cost ($1995 $5).”
(Vol.9 No.6, Vol.14 No.8, Vol.16 No.6)
**Wharton Triplanar IV Ultimate:**
$2375–$2550, depending on termination

Superbly finished, handmade pivoted tonearm allows for
VTA adjustment during play, and
comes with Cardas internal wiring, decoupled
counterweights, and silicone cartridge damping.
A “robust, relinking, label-ization” sound, four SS, who
called its electronics and drive. 
A richer balance than the Clearaudio-Souther
TriQuartz Improved, but less well-defined imaging
than the Graham, felt SS. MF disagrees, feeling
improvement when the Wharton Triplanar offers a
crisper imaging than the Graham. (Vol.18 No.2)

**B Kuzma Stogi:** $950
A GL favorite when used on the Stabi turntable
(see “Turntables”), (Vol.18 No.5)
**Well Temperd Classic Arm: $955 $$$**
One of the most neutral-sounding arms, according
to JGH, then-Korda, (It is not in the price
range) Superb highs, stereo soundstaging, and
midrange, plus excellent compatibility with MC
cartridges that put a lot of energy back into the
arm. Some deficiency/sensitivity in the low bass—
and, according to some listeners, an undynamic
sound—keep it from Class A, but virtually no
other problems. Good value for money. The Black
Classic armature, which is currently being supplied with
new Well Tempered Classic Turntables, is
available as an upgrade for the Stogi arm,
which adds a thicknessening in the lower midrange when
the arm is mounted on the Well
Tempered Turntable (see Vol.11 No.6), further
improves the sound, as does replacing the
standard counterweight with one of more massier than
the current. RH recommends the EP Transducer.
(Cartridge No.6)
(All prices in $US)

**C Audioquest PT-8: $750**
TJJ got excellent results from the PT-8 fitted
with Signet OSC-9 and Audioquest 404-L phono
cartridges on a SOTA Jewell turntable. Soundwise,
the balance is a bit more forward in the midrange than
the Graham arm, but with excellent
 dynamics. The armature is dead, there’s no play at the
pivot point, and friction seems very low, he found,
somthing up as “a gem.” Otherwise identical
Audioquest PT-7 ($625) and PT-6 ($495) differ
from the PT-8 only in having less highly specified
Audioquest arm to-preamp cables. (Vol.15 No.4)
**K Immedia RPM-2 Unipivot, Wilson Benech
and Fisole:** (Vol.14 No.9)  
**Kuzma Stogi Reference, Rockport Technologies Capella.
Deletions
Rega RB300 no longer available in the US.

**Phono Cartridges**

**Audioquest 7000 Fe8: $2550**
More-expensive replacement — with bronc car-
terweight and non-removable top-riber — for the
excell-ent-sounding 7000wxc is less dry-sounding and
not quite as “razor-sharp,” notes MF. Outstanding
detail and overall authority, however, plus a musi-
cially inviting balance. Relatively high output of
0.4mV at 1kHz with MC used in detail, but
softer than some other Scan-Tech
Designs. Correct VTA critical for optimum
performance. (Vol.14 No.6, Vol.15 No.1, original ver-
sion) see MF’s review in this issue.)

**Benz-Micro Ruby:** $3000
Some disagreement between JS and JE over this
European wooden-bodied MC, which has an
unsuitable low output. With a high-gain preampli-
ifier that allows its dynamics to fully develop, the
Ruby brings favor accuracy over the spectacular, neutral-
ity rather than immediacy, but might be consid-
ered too self-effacing for some. The clarity was
excellent. Price with quality名家-trade in cartridge is
$2000; retipping costs $500. (Vol.18 No.1)

**Linn Akiv: $2295**
This Scan-Tech-sourced, totally neutral, three-
pronged tracked MC, (It has a less incisive,
more soft-sounding presentation than the Troika it
replaced, but excels in its feeling of musical
communication. Some sample inconsistency, however.
(Vol.16 No.11)

**Lyra Classic Da Capo: $1895 $$$**
(See MF’s review in this issue.)

**Lyra Parnassus: $3495**
Though neither JS nor JE felt the Parnassus was a
champ at detail retrieval or dynamics, they both
unhesitatingly gave this Scan-Tech-sourced low-
output MC a Class A rating. “A music-lover’s car-
tidge immediately musically satisfying but
never offensive-sounding,” was MR’s conclu-
sion; “delightful midrange textures,” and “it con-
votes emotion,” summed up the sanguine Mr. S. (Vol.18 No.2)

**Symphonic Line RG-8 Gold:** $5000
What’s so endearing about the handmade RG-8,
according to DO, is its rare mastery over music’s
cinerea and brassy: the effortless detailing, the
smoothness of expression, and the purity of texture
are combined with the bass impact and dynamic
power of a steam locomotive. Works best into
high-impedance loads. JE and JS were also mighty
impressed, the latter with the precise deline-
ation of images, the former with its pace, drive,
slam, and rhythmic integrity. Not kind to sized
recordings, however. (Vol.16 No.2, Vol.18 No.2)
**van den Hul Grassopper IV:** $5000
Now distributed in the US by Stanalog Imports,
the hand-built Grassopper IV differs signif-
antly from earlier ‘hoppers and incorporates AJ van
den Hul’s latest thoughts on cartridge design.
Changes significantly during break-in, after which it is
not as analytical-sounding as the Symphonie
Line RG-8 but “balanced more toward the
relaxed, rich, and musical,” decided JS. The vdh
also features a very wide and envelopingly deep
soundstage.” (Vol.18 No.7)

**B Blue Oasis:** $1650
Though its top end is a little softened in absolute
terms, JE liked the Oasis more than JS did, the
latter finding it sound too mellow. Needs to be
used with a high-gain, low-noise phono preamp,
with Jed, its retrieval of detail can be heard to
be excellent. The bass is extended, tight, and pow-
erful. (Vol.18 No.1)

**Clearaudio Signature:** $2300
While both JS and JE liked the neutral sound of
this high-output German MC, neither felt it
to quite scale the heights of Class A performance.
The highs are extended and open, but this may
have contributed to a sensitivity to disc surface
noise. “An immediate, vibrant perspective,” com-
mented JS, who, like JE, preferred the Signature
load with 49k ohms. JE felt it sounded quite as
ludicrous in the midrange as he would have liked,
but also commented favorably on the sense of air
and space it produced. (Vol.18 No.1)

**Clearaudio Veritas-S: $1950**
SS’s current reference, the Veritas-S is a superb
match for the Clearaudio-Souther arm (see “Tonearms”). (Vol.18 No.4)

**London (Deca) Jubilee: $1600**
MC claims that “when it’s good, the Jubilee is very,
very good; but when it’s wrong, it can be horrid.”
It sets the standard, he feels, for dynamic expres-
sion and overall dynamic. B with JS, the
typical range of groove modulations clearly or
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Stereophile, April 1996
convincingly. When the going gets tough (ie, loud), the Jubilee loses clarity and detail — and causes excessive groove wear to boot. (Vol.18 No.6)

Sumiko SHO Reference High-Output: $1800
WP feels this high-output MC has body, presence, and rhythm — and a purity in the high frequencies that causes overtones to float forever. "It sounds like music," he pronounces. Well-built, reliable, and extremely musical, he says, with an uncanny knack for sorting out audible details in the quietest passages. (Vol.18 No.4)

C Sumiko Blue Point Special: $295 $55 CG enthused about this node, P-Mount-less version of the standard Blue Point MC, pointing to its 2-oz bass blast, tonal honesty, and cleaner, more extended highs. It also offers excellent detail and focus. A touch of Stylus applied to the underside of the cantilever optimizes the bass. High output. (Vol.16 No.4 & 12)

1) Benz-Micro MC-20E II: $150 A master in the bass, with excellent soundstaging, but less smooth than the standard Blue Point, with somewhat wavy highs. (Vol.16 No.4)

Roksan Corsa Black: $400 The best moving-magnet design CG has heard, the Black is more forward-balanced and less refined overall than the Blue Point Special, but has tighter bass and better-focused soundstaging than the standard Blue Point. Fussy about VTA. (Vol.16 No.5)

Sumiko Blue Point: $150 Rather a woolly bass, due to the P-Mount/adaptor configuration, but sweet/ balance lacking any nasality, thought CG of this high-output MC. (Vol.16 No.4, Vol.18 No.8)

E Grado ZTE+1: $30 The best buy in a really cheap cartridge, this MM has excellent trackability and sounds rather like a good MC. Symphonic readers should consider spending more than $30 on a cartridge, but when asked by friends what they would recommend for an old Dual or Garrard, this “system saver” is the one to mention. Will hum if used with older AR decks (an "AR" version is available); lack of suspension damping can lead to woolly pumping, even without high- or even medium-priced arms. (Vol.7 No.8; actual review was of the earlier GTE+1)

K Cardas Ruby, Roksan Shiraz, AudioQuest MC-200, Dynavector XX-11, Denon SI, Benz-Micro M0.9, Benz Glider, Blue Oasis Signature, Sumiko Transfiguration Temper, Clearaudio Insider, Wilson Benesch Hybrid, Grado Signature Jr. Deletions Benz-Micro Reference not auditioned in a long time; Ikeda Kiwame no longer available.

PHONO ACCESSORIES & RECORD CLEANERS

A Audio Physic cartridge demagnetizer: $349.95 MF found this device most effective in maintaining that "like-new" quality of his MC cartridge. He recommends placing styli in groove of stationary record when using, in order to center the coils in the magnetic field. (Vol.18 No.12)

The Cardas Sweep Record: $16 $85 Inexpensive degaussing aid for cartridges that also, it is claimed, ultrasonically cleans styli. Record also features blanket, ungrooved areas that facilitate anti-staking adjustments — or, for linear-tracking arms, level. MF found it effective, especially when considering "there wasn't a reason it wouldn't be without it" enthuses JS. (Vol.18 No.12)

DB Systems DBP-10 Protractor: $34.95 Fiddly but accurate gauge for setting cartridge canting. JJs and JGG's preferred alignment protractor. (NR)

K A-B Speedy Stroke Digital Phonograph Speed Readout: $79.95 plus $4.50 S&H Easy-to-use strobe disc simplifies precision adjustment of turntable speeds from 33⅓ to all the variations on "78." "It's just fantastic," effused JS. "It looks cool, and it's a snap to perfectly set the speed." (Vol.17 No.5)

LAST Power LP Cleaner: $32.50/half-oz bottle This small bottle of Freon-free cleaner is enough to treat 75 LPs. JE found just three drops sufficient to remove dirt, dust, and grime from garage-sale records, though he found that a subsequent wash with his VPI HW-17 was still required to reduce the level of groove noise to acceptable levels. "A worthwhile companion to LAST's wonderful Record Preservative." (Vol.17 No.5)

LAST Record Preservative: $32.50/2-oz bottle Significantly improves the sound of even new records, and is claimed to make them last longer. A 2-oz bottle contains 60 treatments. (Vol.5 No.3)

Lyle Cartridges Alignment Tool: $15.95 Inexpensive and invaluable — this little tool has alignment markings and a spud-cutter. Slip it into place on your platter and use the classic two-point grid system to make sure everything's aligned. The mirror is the trick — it allows you to see the cartridge's position against the markings themselves. "An essential tool," declares WJP (NR)

Nitty Gritty Mini Pro 2 record-cleaning machine: $775

Nitty Gritty 2.5FI record-cleaning machine: $555

Nitty Gritty 1.5FI Mk.II record-cleaning machine: $499

The Mini Pro is a semi-automat machine that cleans both disc sides simultaneously. The 1.5 is identical to the 2.5 but substitutes vinyl for the latter's genuine oak side panels. Instead of a vacuuming "tonearm" on the Mini Pro (its conventional Keith Monks machine, the NG cleaner uses a vacuum slot. Cleaning is efficient and as good as Nitty Gritty's Pro, at a significantly lower price, though it takes twice as long, cleaning each side of an LP in turn. While the vacuum-cleaning Nitty Gritty does a similar job to the Mini Pro, the closely similar VPI HW-16.5, CG felt that the VPI's hard-bristled brush did better with really dirty LPs than did NG's velvet one. He found the effect was both of producing a less-colored, more detailed midband sound from LPs, as well as provide the expected reduction in surface noise. (Mini Pro, Vol.8 No.1; 2.5FI, Vol.7 No.5, Vol.8 No.1; 1.5FI, Vol.17 No.5)

QR/DrM Design Ringmat MK.II turntable mat: $74.95

RD found this paper/cork mat (available in three thicknesses) to both reduce groove noise and increase detail resolution when used on his Lingo'd Linn. Some initial difficulties with the cork rings detaching, says ST, but he found the Ringmat to turn his AR into a more detailed, more neutral-sounding 'table. Now distributed in the US by Music Hall. (Vol.7 No.5, Vol.18 No.1)

Shun Mook record weight: $1200

The best record weight JS has ever used on his Forsell turntable, "bare none." Ridiculously expensive, however. (Vol.17 No.2)

VPI HW-17 record-cleaning machine: $900 VPI HW-16.5 record-cleaning machine: $450

Clearly an industrial-quality machine of reasur-
"Here was a clear case of having to abandon the usual spatial descriptors. Stuff 'holographic' and 'palpable' in your mouth and blow them out your nasopharynx. Instead, pack a lunch and get ready for a hike. Walk among the performers, reach out and touch someone. I know of no finer conduit for creating the illusion of live music in the home... Dynamics, low-level detail resolution, and tonal balance are firmly class A in performance."

"...SANS Pareil' is the French equivalent of 'Without Equal'. As far as I am concerned, the SANS PAREIL has earned that moniker - Dick Olsher"

STEREOPHILE Vol. 15 No. 6 June 1992

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**CD PLAYERS**

**Editor's Notes:** The class ratings are a little different in this and the following two sections, whereas the phrase "state of the art" can be interpreted if one allows for the superlative, then the best CD sound available as of the time of writing. With every advanced replay system, realize that the goal still seems to be just as far away as in the analog LP still gets closer to the real thing.

As with computers, a CD-replay system becomes effectively obsolete as you drive it home from the store. We urge caution to someone about to purchase an expensive "state of the art" CD player. Perhaps the wisest strategy these days would be to buy separate transport and DAC units, eventual replacement of the latter being the best way to stay abreast of continuing development. (Note that the class ratings for CD players and DAC processors are not necessarily directly comparable.)

Deficiencies in the A/D converters used to master CDs may well be the limiting factor in CD sound — see RH's interview with Doug Sax in Vol.12 No.10, and compare the sound of the industry-standard Sony PCM-1630 with Chequy's 128x-oversampling A1C on the appropriate tracks on the first Stereophile Test CD.

However, even though there are only a few HDDCD recordings available, the digital playback world is moving so fast that we can no longer rely on the results of the Pacific Microsonics PDM-100 HDCC decoder/digital filter chip. That is no doubt in RH's mind that the advent of HDDC recordings and players represents a significant step forward in digital playback quality, providing sound more like analog, with deeper, better-defined soundstaging and a more accurate rendering of instrumental and vocal timbres. MC points out a lack of pace, however.

A **Accuphase DP-65:** $5750

"The natural warmth of recording after recording shone through, suffusing the sound with an expansive glow and bloom," enthused TJN about the relaxed tonal balance of this Japanese player, which uses Burr-Brown PCM1702 DACs in a balanced configuration. "MUSically complete." (Vol.17 No.10)

**Audio Research CD-1:** $2995

WP went batt over the CD-1, insisting that "This is the one I turn to when I listen for pleasure." He lauded its articulation, rhythm, and intonation, but did notice a softening of the LF. RH, however, found the bench tests disappointing, pointing out "some de-emphasis at the upper bass, a slightly brighter, livelier sound to pre-emphasized discs." He also noted high noise levels. Philips has discontinued the transport mechanism used by ARC, so a thorough re-evaluation is indicated. (Vol.18 No.12)

**Krell KPS-20:** $9900

**Krell KPS-20/1t:** $11,000

"It is possible to call a $9900 CD player a bargain?" RH quipped. "Yes," he concluded, "when you consider how much it would cost to achieve the KPS-20's sound quality with a separate player and transport." Impressed by its "unbelievably deep, tight, and authoritative bass," he pointed out that "more bass isn't necessarily better, but when combined with excellent agility, pitch resolution, and detail, the result is a greater involvement in the music." MC has heard it: $11,000 20/1t is the best-sounding Krell digital product — something confirmed by WP, who wondered if it was due to the absence of a preamp. (Vol.18 No.4, 20/1t Vol.18 No.10, 20/5)

**Linn Karik CD transport & Linn Numerik D/A processor:** $1690

Two-box system in which the DAC locks the transport via a separate link. Current version of the Karik transport ($3595 if bought separately) incorporates a Crystal D/A section to enable it to be used as a standalone CD player. Though each on its own is a high-class B contender, the Karik forms a synergistic match with the Numerik to give true Class A sound. MC finds its laid-back presentation offsetting, but WP enthuses over its "excellent truth of timbre and improved sense of pace and timing." The latest version of the $2595 Numerik has a switch-mode power supply that RH felt gave a significant improvement in sound quality, and Burr-Brown PCM1702 DACs that give a better sense of LF pace. (Vol.15 No.1, Vol.17 No.10)

**B**

**Meridian 508-20:** $2895

Very similar to Meridian's 500 transport/633 processor combination. "Detail, air, more of a sense of musicians' palpable presence," coupled with "crystalline clarity" and "harmonic richness," was how ST summed up this English player's sound. A basic remote control is supplied; Meridian's System Remote costs $99. (Vol.17 No.12)

**Micromega Stage 2:** $1075 **SS**

"I have no qualms recommending [the Stage] to anyone looking for an engaging, affordable CD player," WP gushed. He adjudged it true to the music, and "a soundstage that's really big but not at the expense of a sense of depth and dimensionality, which are superb." (Vol.18 No.10)

**C**

**Marantz CD-63 Mk.2:** $3999 **SS**

ST's budget reference: astonishingly detailed, smooth, clean, clear, sweet, non-fatiguing. Lacks dynamic drive, however, as well as ultimate bass extension and resolution. But "a bit special," confirms MC. Marantz CD-63 Special Edition costs $9999; ST's opinion is that it has the extra 100 bucks for its smooth, sweet balance and greater openness and resolution. Sounds more airy than the Quad 67, but has a leaner balance overall. "A killer $500 player," he concluded. Current version of the basic 63 uses the same AC transformer as the SE. (Vol.17 No.1 & 8; Vol.17 No.12, Special Edition.)

**NAD 502:** $299 **SS**

The first production run of this basic deck suffered from reliability problems, due to the lack of a "transistor screwdown" of sorts. The basic 502 has been replaced by the "clear, open, and unrestrained sound quality," raved CG, with a "lively, powerful bottom end, but slightly soft on top." "Makes life very difficult for players in the $500-$1000 range," he concluded. Class C, agrees TCN. (Vol.17 No.4)

**TEAC VRDS-10:** $1250

Massively built player that uses the clamp/transport system first seen in the Esoteric P-2 transport and Philips Bistream DACs. Excellent sense of reproduced space coupled with good dynamics, found JS, but sound let down by a slightly exaggerated top end (audible and measurable) and a degree of midrange grain. Makes an excellent transport, he found. (Vol.17 No.11)

**D**

**Editor's Notes:** There are currently no Class D CD players listed.

**K**

**Wadia 16, Sonic Frontiers SFC-1, CXL iCON Mk.II HDCC**

**Deletions**

Naim NA CDS, MSB Technology Silver, JVC JVX-Z1005TN, and Pioneer Elite PD-65 not auditioned in too long a time to be sure of current ratings; CXL iCON Mk.II HDCC — found to have distribution in the US; Sony CDP-X707ES/ CDP-X779ES no longer available.

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**Digital Processors**

**Editor's Notes:** The sound of the basic CPU CD digital processors can be varied depending on the external DAC.

**Accuphase DC-91:** $13,995

DO found multilayered recordings with complex reverse signatures more clearly resolvable with this processor, with a natural synergy achieved when driven by the matching DP-90 transport. In addition, he enjoyed greater access to the inner recesses of the soundstage, as he let his mind's eye explore the full depth and width of the spatial perspective. Absolute reference caliber, in his estimation, and a perfect 10. (Vol.17 No.10)

**Audio Alchemy DTI-Pro 32:** $1595

Newest iteration of AA's top jigger attenuator incorporates a 32-bit DSP chip that reportedly offers 50% more computing power, allowing the DTI-Pro 32 to run an enhanced Resolution Enhancement algorithm. RH asserts, "It's hard to imagine that a world-class digital front-end such as the Mark Levinson No.31 transport and Spectral SDR-2000 Pro digital processor could be improved by a little Audio Alchemy box, but it was." (Vol.17 No.10) With tightening and more expansive, and better revealed space and instrumental bloom around instrumental outlines. [It made the presentation sound more like real instruments existing in a real space." "A flat-out musical product," enthused MF, "that makes CDs listenable." (Vol.19 No.3)

**Class DAC-1:** $3995 **SS**

RH was "stunned" by the performance of this giant-killer processor, deeming it "a revolution in the price/performance ratio in digital playback." Its resolution impressed him mightily, "on a par with the Spectral SDR-2000 Pro ... That's saying a lot for a $4000 D/A converter," he maintained. He also took note of its extraordinary overall sense of power and slam and a lack of strain with complex, high-level signals, emphasizing that "in terms of wide dynamic contrast and sheer slam, the DAC-1 was the best processor I've heard." Only noticeable character was a slight edge to the sound in mids and treble that diminishes significantly during the long break-in period. (Vol.18 No.12)

**Digital Domain VSP Model S:** $1495

Intended as a sample-rate converter, this slim unit also relocks digital data and virtually eliminates jitter. The sonic result is to render digital sound much more analog-like. LC finds it "very special," with a "snap to the bass that is world-class," with a "very clean, articulate and powerful bass," and "a smooth, uncolored soundstage." RH calls it "the most natural bass I've ever heard." Not even the all-digital 20/1t should go without a pass, however. (Vol.17 No.10; also see "Industry Update," Vol.17 No.1, p.39)

**Encore Pyramid 1:** $3595-$4995

depending on options

This singular-looking D/A processor impressed RH with its "wonderful soundstaging, wide dynamics, powerful rhythmic drive, and freedom from grain." Dubbing it competitive with the best the US makes to offer, he praised its "impressive sense of pace and the bass's "exceptional power and kick," while noting this came at the expense of absolute midrange linearity. Yet, he added, "I can count the Pyramid 1 among a handful of processors that excel in presenting images as individual objects within the soundstage." (Vol.18 No.11)

Enlightened Audio Designs DSP-9000 Pro

Stereophile, April 1996 141
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All associated cable components, both electrical and mechanical, are cross layered.

Stereophile, April 1996
Series III HCD: $5995
MF and SS both assess it to be Class A, but RH feels its cost to be too high for the product. It
feels to be too expensive for the music and the price.

Jadis JS1 Symmetrical: $12,325
Jadis’ reference D/A, the beautiful two-box Jadis JS1 Symmetrical processor features a
Philips Burr-Brown IEM section and tube-based circuitry.

Mark Levinson No.30.5: $15,950
This piece was also cited as one of the "Year’s Products of the Year" for 1992. The No.30.5 update, which
adds a new data receiver board incorporating an "Intelligent FIFO" memory buffer, is a "true
reference-quality product," says RH, adding that "there’s no question that No.30.5 owners
should upgrade to HDCD... anyone who hasn’t converted their No.30.5 is in for a big surprise.
"Jadis’ reference — the closest thing to good LP playback," quote he, HDCD upgrade costs $999 plus labor.

Mark Levinson No.39: $3995
"Run out and buy the No.36... if you have the price of admission," was TN’s advice. "It
certainly must be heard, if only to hear what’s possible in today’s best D/A converters."
Major Tom was particularly enthusiastic, saying it is "as close to perfection as I’ve ever heard and
is a real treat to listen to."

Meridian S8: $1650
Unusual digital-to-digital processor that JA dubbed "the Swiss Army Knife of digital." It
performs digital gain and source selection, converts data with one digital word length to data
with another — such as when transferring data from a 20-bit master to a 16-bit DAT or CD — and
offers a choice of seven noise-shaping algorithms. 
JA used it to master Festival and concluded that it
was essential in preserving the integrity of the 20-bit master when transferring to the
16-bit medium. MJ adds that its ability to buffer 16-bit CD information through it and increasing the word
length to 20-bit going into his Levinson No.35.5
resulted in tremendous improvements. 
"It was goosebump city, even with recordables that usually stick to the manuals. I’m counting numbers," he
goggles. (Vol.19 No.1)

Sonics Frontiers SFD-2 Mk.I: $5295 $$$
One of RH’s two favorite D/A processors — the other is the Spectral — the SFD-2 Mk.II offers
the most cost-per-performance for a competitive price. The Mk.I was Sempéph’s "Product of the Year"
for 1994. The Mk.II features some minor upgrades to the analog circuitry, but, most important, replaces
the Burr-Brown digital filter with the Pacific Microsystems PM13-100 HCD3 decoder/filter
chip. The result, RH found, is a sound that beats anything out there other than the Spectral and the
Levinson No.30.5 — which are now fitted with the same HDCD chip, and which also have
greater LF extension and authority. Where the MK.I Sonic Frontiers had a very upfront balance,
the MK.II has added a huge, spacious-sounding, superbly defined soundstage; smooth, liquid-sounding midrange; superb
rehearsal of musical detail; and tighter image focus.

Enlightened Audio Designs DSP-7000
Series III HCD: $2495
SSI’s reference — he finds this smooth-sounding processor involving and musically satisfying.
He emphatically recommends the Series III upgrade to all Series 1 and II owners. Gold finish adds $200,
balanced outputs add $399. (Vol.18 No.5)

Meridian S63: $1395 $$$

With a bass that’s weighty, extended, and controlled; an open-sounding, spacious soundstage;
and a smooth, liquid-sounding midrange; this inexpensive unit with a jitter-rejecting dual-PLL receiver
is "the best-sounding processor in its class," according to RH. Not as much bass slam as the
sonics, but has a greater overall depth and treble grain. (Vol.17 No.4)

Muse Model Two: $1700 $$$
Borderline Class A! Impressively constructed 20-bit digital processor featuring unique jitter-suppression
circuitry and "near ideal" power supply. SI Predicted its "most interesting processor in its price
class" when it was reviewed three years ago and extension and its ability to deliver leading-edge
transient information. Achieving this level of performance for less than $2000 is truly remarkable,
he postulated — while noting that the passive current-regulator voltage conversion used, which results in
a greater 1V output, will preclude the use of pas-
sive control units. AES/EBU input adds $300 to price; ST optical input, $200; HDCD upgrade, $300. 
(Vol.18 No.7)

Parasound DAC-2000 Ultra: $1995 $$$
(See review in this issue.)

PS Audio Reference Link: $4795
A full-function, remote-control digital control unit with balanced and single-ended outputs that’s
intended to drive the power amplifier directly. Includes an excellent A/D converter for analog sources (though no input 2/1 control is provided),
and a digital-domain volume control. RH felt the overall sound to be somewhat better than the
PS UltraLink in that it was more vivid, more incisive, with better detail resolution and soundstaging.
Highly recommended, agrees MC, nominating it a borderline Class A. MJ points out that using the Reference Link with an external preamplifier leads to a significant drop in
sound quality. "Outstanding resolution, image definition, and space," adds MF; but notes that the
Reference Link’s brain-sounding midrange keeps it from competing with, for example, the EAD
DSP-9000. (Vol.16 No.10)

PS Audio Ultralink Two DAC: $2295
RH "highly recommends" the UltraLink 2 — especially when utilizing the RCA jacks — but notes that
although it retains its front-end performance and resolution, due to the use of 24-bit converters and
the added weight due to its digital-domain volume control, it is "an entry-level product."

Resoludion Audio Quantum: $2495
A bargain bag, MW notes, however, that even with Resolution’s own transport, allows users to take
advantage of novel Balanced Data mode. Unfortunately, the resultant sound was not commensurate with $10k price tag. Used as a single
DAC processor, the Quantum "sounds good, but a little pricey for the performance." (Vol.18 No.10)

Theta DS-10 Pro Basic III: $2695
Impressed TNJ with "good detailing, depth, and any of the low-lying qualities — nothing artificial
about the sound of this converter. If I were shop-
No compromise designs beautifully crafted in New Zealand, Plinius components combine the resolution, warmth, and luminous harmonic integrity of the finest vacuum tube electronics with the stability, low frequency extension, and power reserves of modern solid-state gear.

Premium grade components, including Caddock resistors, Hovland capacitors, and heavy-gauge Siltech wiring, combined with striking brushed-aluminum styling yield designs of exquisite sonic purity and physical beauty.

Plinius world-class discrete-component preamplifier and user-switchable pure class-A power amplifier designs simply surpass all their competition, and the price of admission is remarkably affordable.

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ping in this price-range, he'd put the Pro Basic HI high on his list. WP concurs: "Detailed, but never aggressive," he says. (Vol.18 No.11)

Timbre Technology TT-1: $3295

Good-sounding, says RH, but expensive for sound quality offered. Roughly comparable to the Meridian 563, but with better spatial definition and no appreciable straining in the review — and a much nicer chassis. A well-balanced performer, thought JS, with a smoother, darker balance than the Sonic Frontiers SFD-2, with powerful low frequencies. Balanced version costs $3095; adding balanced outputs and an AES/EBU interface costs another $110, bringing the TT-1 costs $800. Unbalanced, buffered outputs have a very high level. (Vol.17 No.4, Vol.18 No.5)

A

Adcom GDA-700: $1000

LG was quite taken with the HD101-compatible GDA-700, finding it well-built, dynamic-sounding, transparent, and musically involving. He also noted that it did a superb job of rendering the musical acoustic on his discs, through its resolution of low-level detail coupled with admirably transparent midrange reproduction. (Vol.18 No.11)

Audio Alchemy DDE v3.0 HDCCD; $799 $$$

"It was just a matter of time," asserts RH, "before a high-end manufacturer introduced an affordable HDCCD-based system. It's no surprise that it was Audio Alchemy... It's rare to find this combination of features at such an affordable price." He proposes the DDE v3.0 be put at the top of any audition list of cost-effective digital upgrades. LG concurs, ranking the DDE v3.0 as a favorite. RH adds that when the v3.0 is used with the 17TI v2.0 via the J5 interface, the performance gets a whole notch to Class B. Remote control adds $149, Power Station 3 adds $259. (Vol.18 Nos.7 & 12)

Bel Canto Design Aida: $1790

A DO favorite, this solid-state processor is broadly similar to the Meridian 563 in that it uses the Crystal one-bit DAC and receiver chip set, with a proprietary jitter-reduction circuit. Excellent soundstaging and "gleamingly pristine" upper mids are coupled with a forceful bass presentation. (Vol.17 No.12)

California Audio Labs: Alpha: $1495

Again using the Crystal chip set but with a tubed analog stage, the Alpha excels at the retrieval of musical detail, "mind-blowing" and "low-level nuance, found DO. The balance is a little bright with the back Chinese 12AX7 tubes; Yugoslav substitutes significantly smoothed the sound. Highlevel output impedance rules out the Alpha's use with passive control units. (Vol.17 No.12)

Counterpoint DA-10: $1895 plus DAC Card

Well-made mainframe processor that accepts interchangeable DAC cards. The AD1862 DAC card costs $325, offers excellent sense of pace, a grain-free treble, a transparent soundstage, and is the best-value card. The UltraAnalog card costs $1295 and has the sweetest sound, according to LH; one of the best cards to be too warm and full, however. The Crystal 1-bit card ($395) sounds smooth and easy on the ear, but lacks immediacy and pace. There's also a Burr-Brown card at $655, but this wasn't auditioned. AES/EBU and AT&T connectors each cost $200. Current production features new, low-jitter data-receiver module ($495 as upgrade; price includes HDCD digital filter) that JA feels sweetens the sound considerably. (Vol.17 No.2)

Enlightened Audio Designs DSP-1000

Sonic Frontiers SFI-1 M II, Theta DS Pro Prime II, Ensemble DiChromos, PS Audio DLS & SL3, Audio Alchemy UltraMatic, Thetis Chroma $396, Emotiva Number Cruncher Revised

Deletions

Adcom GDA-600 replaced by 700; Micromega Duo BS-2 not auditioned in too long a time; Cobalt 307 replaced by Chroma 396, not yet auditioned.

K

Sonic Frontiers SFI-1 M II, Theta DS Pro Prime II, Ensemble DiChromos, PS Audio DLS & SL3, Audio Alchemy UltraMatic, Thetis Chroma $396, Emotiva Number Cruncher Revised

Deletions

Adcom GDA-600 replaced by 700; Micromega Duo BS-2 not auditioned in too long a time; Cobalt 307 replaced by Chroma 396, not yet auditioned.

Audio Alchemy DAC-in-the-box: $295 $$$

Sets a new standard for sonic performance per dollar. "Avoids the worst faults of inexpensive digital," said RH. Excellent articulation in the bass, with excellent soundstaging but slightly grainy treble. Borderline Class C, says LH, held back by its weak low-level detail and texture. Perfect for upgrading the sound from laserdisc in a high-end Home Theater, or for getting high-end sound from a mass-market CD player (provided it has a digital output). Benefits from use with a bigger Audio Alchemy power supply — the PS1 is now included in the price — and a DTI or better jitter-reduction box. (Vol.17 No.3)

Audio Alchemy DAC-MAN: $159

RH finds this unit an amazing achievement for $159 — with surprisingly good soundstaging and smooth tonal presentation — but lacking the detail, nuance, and refinement present in Audio Alchemy's $295 DTI. He urges anyone contemplating using it as part of the primary source for a high-end system to find that extra $100. However, compared to the built-in DACs in most laserdisc players, the DAC-MAN provides smoother, softer, less fatiguing performance; he enthusiastically recommends it for Home Theater applications. (Vol.18 No.7)

K

Sonic Frontiers SFI-1 M II, Theta DS Pro Prime II, Ensemble DiChromos, PS Audio DLS & SL3, Audio Alchemy UltraMatic, Thetis Chroma $396, Emotiva Number Cruncher Revised

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Deletions

Adcom GDA-600 replaced by 700; Micromega Duo BS-2 not auditioned in too long a time; Cobalt 307 replaced by Chroma 396, not yet auditioned.
Synergy?
Locking-In?
Enhancement?
Compensation?

How many inappropriate and ineffective ways to "fix" an audio system have you been subjected to?

Sorry to be so negative, but understanding an audio or video system requires first acknowledging that there is no positive side to the process -- it is entirely a matter of reducing negatives. Perfection is zero -- zero change.

Upgrading a particular component will improve overall system performance. However, this does not mean that the signal was "improved". Believing claims that components can cause a positive improvement to the signal leads to many false fixes.

Terms such as "synergy" and "locking-in" are often used to try to describe an "unexplainably" large improvement resulting from a particular equipment substitution. Employing these terms implies something akin to $1+1=3$. $3-1=1$ might not make much more sense, but at least it acknowledges that system improvement comes from reducing negatives, not chasing illusory positives.

If one's understanding of a system's cumulative nature is inadequate, certain changes can seem almost magical. However, being greater than expected or understood does not make them magical or incomprehensible. If something is farther away than we can see, that does not mean the distance in between is infinite.

Every "component" matters. Every amp, speaker, cable -- even every solder joint is like one of the dirty panes of glass in this illustration. They all matter. The quality of the final performance is the quality of the original minus the damage done by all the pieces in between. Cleaning any one of the dirty panes will allow a clearer view of the music.

If one recognizes the negative nature of our challenge, then certain greater than expected improvements become understandable. If each of the panes are not only dirty, but also have a red tint, then as each individual pane is cleaned and Murined (get the red out), the view of the music will improve. However, it is only after the last red pane is de-tinted that the red will be completely gone. This last change will assume greater significance than the previous changes because we are more sensitive to the presence of a phenomenon (the red) than to the quantity.

This "synergistic" aspect of this improvement would have been true no matter which of the offending panes was the last to be "fixed". It would be inappropriate and false to ascribe special properties to the component which just happened to be the last one changed.

To assemble a system which is both sonically effective and cost-effective, either the purchaser or the advisor needs to have a broad perspective and an effective evaluation methodology.

For more information about developing a trustworthy evaluation methodology, please write/fax/call us to request our Methodology paper (aka the instructions for our "Get To Know Us" sample/loaner kits).
563 processor, striking just the right balance between immediacy and ease. (Vol.17 No.4)

McCormack Digital Drive SST-1: $1495
WP was quite taken by this top-loading transport, particularly by its sensor of articulation and liquid presentation of the upper octaves. He noted that its nuanced sense of pace was extraordinary in a product at this price. Philips has ceased manufacturing the mechanism used in the review sample, so a re-evaluation is called for before the next "Recommended Components." Provisionally recom-

PS Audio Lambda: $1795 $$$
“Tremendous punch and dynamics,” decided RH, though less liquid-sounding than the C.E.C. "Well-balanced, a fine value," adds MC. "A workhorse," according to SS. RD notes that current production as of summer '95 has a crisper, more dynamic sound, with faster track access. About to be replaced by Mk.2 version. Price includes AES/EBU and coaxial outputs; AT&T ST output adds $300 to price. (Vol.16 No.10)

Sonic Frontiers SST-1: $2295 $$$
Transport designed in strict accordance with S/PDIF specifications (less common than one would think) and possessing a relocking circuit designed to reduce jitter. RH lauded its "combination of superb dynamics, a weighty and powerful bass presentation, a huge soundstage, a wonder-

California Audio Labs Delta: $895 $$$
The little Delta offered a smooth, detailed midrange and an excellent sense of pace when it was used to drive CAL's Alpha processor via an AES/EBU balanced data link, found DO. Superb error correction. Borderline Class B, overall. (Vol.17 No.12)

Editor's Note: There are currently no Class D CD transports listed.


Deletions

Museatex Melior CD-D,JVC XL-Z1050TN, and Pioneer Elite PD-65 not auditioned in too long a time to be sure of current rating; Enlightened Audio Designs T-8000 Universal Disc Transport Series III discontinued.

CD-PLAYER ACCESSORIES

Audio Prism CD Stoplight: $15.95
Green, water-based acrylic paint for coating the edges of CDs. The green color, which absorbs the laser's infrared wavelength, is presumably signifi-
cant, but at present, we have no idea why this would so improve the sound of CDs. That it does so, however, seems to be beyond doubt to anyone with ears to hear (though no one single product has raised greater eyebrows to the mainstream listener) is alluded to by PW, and JA, all of whom feel that it increases soundstage definition, improves the solidity of bass reproduction, and usefully lowers the level of treble grain so typical of CD sound. PW and MC report that a water-based poster pen, the Uniposca from Mitsubishi, has a very similar effect. MC also notes that the CD should first be dusted and its edges wiped before the green paint is applied. PW and JA, for example, do so; and T&J's WCES reports in Vol.13 No.3, ST's and RH's articles on CD tweaks in Vol.13 No.5, and "As We See It," Vol.18 No.7

CD-Quality Test Guide: $25
"If you're into glossing up your CDs, this is the best stuff I've come across," says CG. (With all CD treatments, take care not to scratch the sur-

Price: $55

CD Saver
Eliminates scratches from CDs and laserdiscs, render-

CD-Saver: $14.95 treats 200 CDs
Rescues badly scratched CDs. "For damaged CDs, this stuff really is magic" enthuses JE. (Vol.17 No.13)

Compact Dynamics CD Upgrade: $15.70/ten, $49.95/fifty
Self-adhesive polyester disc with centering system that's stuck to the CD's label side to produce sub-

风机CD Lens Cleaner: $21.95
PW found this CD fitted with six tiny brushes in a spiral to be effective in improving the sound of his 18-month-old Marantz CD-80. (Vol.14 No.11)

Finyl CD treatment: $11.95 treats 100 CDs
This surface treatment makes CD sound more "open, direct, and dynamic," determined PW. A larger bottle ($25.95) treats 200 CDs. (With all CD treatments, be careful not to scratch the playing surface.) (Vol.14 No.11)

Sumiko Reference Band: $17.95/250
Molded, non-adhesive Navon band that fits around the periphery of a CD to produce the same aural benefit as CD Stoplight, including an increase in the amount of reproduced reverberation and improved bass quality. Similar but cheaper Allop Protective Stabilizer appears to work as well. (Vol.14 No.11; see also ST's column in Vol.13 No.9.)

Taddeo Digital Antidote line-level CD filter: $170
A patented passive analog circuit that fits between a CD player's output and the preamplifier. Rolls off the highs and adds a slight phase lead in the top octave; however, JE found a significant improve-

PREAMPLIFIERS

Editor's Note: Apart from the Jadas, Audible Illusions, YBA, Air Tight, and CAT, all the Class A preamplifiers offer both balanced outputs.

Audible Illusions Module 3: $1995 $$
Simple tube preamplifier "offers the highest level of performance at a bargain price," revered MF, who called it his "top pick for overall performance." A superb balance, transparent and dead-silent. Unit boasts mono switch, a rapidly disappearing feature that some audiophiles (WP among them) do not consider dispensable. Optional MC phono board has suffi-

Air Tight RTC-2: $5995/$7195
DO's reference tube line-stage, the RTC-2 excels in its ability to allow the listener to suspend his or her disbelief that they're listening to reproduced music. While it doesn't have quite the starting soundstage transparency of the SFL-2 or the tonal neutrality of the Jadis JP-80, the RTC-2's sound was "downright sexy," was heard as DO in his review. DO points out the artistic and avant garde nature of the preamp's 12AP7 tube is best sourced from RAM Labs; DO found that the best 12AP7 to use was an N.O.S. Telefunken, followed by a Golden Dragon. The matching ATI-1 phono preamplifier has severe measured performance problems, including a severely unflat response, and is not recom-

Audio Research LS5 Mk.II: $4995
The Mk.II version of the all-balanced, all-vacuum-tube preamp is smoother and quieter than the original LS5, and the earlier version's one Achilles' heel—a trace of treble hardness—is alleviated. Warmer- and richer-sounding than the hybrid LS2B, but not quite as neutral as the Pass Aeph P, finds SS. In order to be used with unbalanced sources, this unit needs to be accompanied by the Audio Research BL2 single-ended balanced converter ($1900), which is awkward, adds significantly to price, and drops the sound quality to Class B. (Mk.I, Vol.17 No.8; Mk.II, Vol.17 No.12, Vol.18 No.7, Vol.19 No.2)

A line-level-only all-FET preamplifier, the 3B offers Class A gain at an affordable price—"impossible but true!" enthuses MC. "You could not ask for more at twice the price!" Superbly spa-

Balanced Audio Technology VK-5: $3995

Sterophile, April 1996
Introducing the Alón Trio System

The Alón Trio System consists of a pair of the exceptional petite mini-monitors and the matching PW1 Woofer. The Trio System provides a previously unobtainable level of sound quality within the convenience of a three piece system. In the past, three piece systems incorporated significant performance compromises. Now Alón eliminates the compromise while maintaining outstanding value.

FEATURES
— Petites are run full range without an additional crossover
— PW1 Woofer provides stereo bass in one enclosure
— PW1 utilizes two 6 1/2" drivers for very fast response
— Separate built in low pass filters in PW1 for each driver
— Room response extended to 32 hz.
— Can be driven by a good 50 watt amplifier or receiver
— True tri-wire performance with Black Orpheus Cable
— Variety of exquisite wood finishes on Petites
— Made in USA
— Suggested US Retail $1495

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the dynamic life, precisely defined presentation of detail, and exciting immediacy with which this balanced tube design rendered his favorite discs. "A stellar performer," he maintains. Transparent as any minimalist line-stage, he points out, but offering sufficient features to make it a joy to use. Cautious TJN recommends careful system matching due to high output impedance.

(Rev.18 No.12)

**Cello Palette Preamplifier: $7500**

As well as holographic imaging and superb transparency across the board, the Palette Preamplifier offered "a musical quality I didn't know existed," according to LL, though JE is less convinced. Extremely high input impedance, but only 6dB of gain, incorporates superb graphic equalizer that differs from a normal equalizer by allowing a larger percentage of interaction between the bands. In combination with the fact that the maximum amount of boost and cut decreases toward the center of the audioband, this actually results in very fast optimization of program material by ear. Note that the response with the controls centered but not bypassed is not quite flat, which will invalidate listening comparisons to pin down the sound of the EQ circuitry on its own. Optional phono stage adds $1795. See also LE's Cello system review in Vol.18 No.7.

**Convergent Audio Technology**

**SL-1 Signature: $5950**

JE's reference, the tubed CAT is both harmonically accurate and able to endow the music with "phenomenal realism." LJ SJL feels that the CAT can be vividly balanced and ruthlessly revealing. RN deniers, feeling the CAT obscures information. Both JE and JSK think that it excels in the reproduction of dynamics and of a palpably real soundstage. Phono stage is quiet enough to work with the AudioQuest .6mm. "Magic," summed up Mr. E.; "still the one to beat when price is taken into consideration." A "great preamp," adds RD, pointing out that production as of summer '95 is even quieter and has more of a see-through quality. RN deniers, feeling the CAT's presentation to lack "plainness," summed up SJL's "Sufficient for the Price." (Vol.15 No.12, Vol.17 Nos.1, 9, & 11, Vol.18 No.12)

**Jadis JP-80MC: $16,760**

While it avoids the expressionistic "Van Gogh" trap that so many tubed preamps fall into, the Jadis's combination of tonal neutrality, velvety harmonics, and beautiful warmth, agreed JE — extraordinary timbral accuracy, and astounding microdynamics lead DO to strongly maintain that it is, above all else, the premier full-feature preamp of the decade. A gateway to sonic heaven, says DO. (Vol.16 No.3, Vol.17 No.36)

**Jadis JPL: $6840**

The tubed Jadis offers timbral accuracy and unmeasurable degree of soundstaging, and sets a new standard in the delineation of dynamic contrasts, thought DO. Fleshes out the full spectrum of shadings from soft to very loud with the greatest of distinction, said RD, as if he could be described with a superlative neutron, "excellent," agreed JE...extraordinary timbral accuracy, and astounding microdynamics lead DO to strongly maintain that it is, above all else, the premier full-feature preamp of the decade. A gateway to sonic heaven, says DO. (Vol.16 No.3, Vol.17 No.36)

**Krell KRC-2: $6900**

LL loves the ergonomicism of this remote-controlled solid-state preamplifier, MC the "confident, clean deep bass," TJN the combination of instrumental weight and body, clarity, and openness. TJN also enthused about the open-sounding, accurately transient, slightly more revealing balanced operation. TJN's reference for lack of preamplifier sound. Standard phono stage ($650) is of high Class B quality compared with the line stage's Class A, thought TJN. Internal Reference Phono stage, not yet auditioned, adds $1250. Current HR (Hi-End) version has a different volume control than the sample auditioned, but is otherwise identical. (Vol.17 Nos.1 & 3)

**Mark Levinson No.385: $6495**

Borderline Class B for the standard No.38 line stage ($3995), which RH feels is not resolving enough for Class A. While agreeing with RH that the No.38 has a laid-back nature, JA enjoys its ergonomics — including the best-thought-out remote volume control — and its lack of treble aggression/grain. The .385 is an upgraded, cost-cutting model offering Class-B features, with more than 36 refinements, principally to passive components. JA found that sonically there is no comparison between the two, calling the No.385 the most neutral, and at the same time most musically satisfying, preamp to have been in his system. RH agreed, while JSK sums up that "specific differences have perhaps bettered a $1000 of competing products, he allowed, but taken as a whole, the No.385 had no weaknesses. Sets a new paradigm, he extolled. (Vol.17 No.8, Vol.18 Nos.7, No.38, Vol.19 Nos.7, No.385)

**Melos MA-333 Reference: $4995 ($6495 with balanced inputs)**

Versatile tubed, three-chassis, dual-monaural full-function preamplifier with separate power supply. Price includes separate phono stage. Line stage has one control that switches power supply $4995 with balanced inputs. Phono line costs $2495 with its own power supply. (Original Gold version, Vol.11 No.11; see RN's review in this issue.)

**MFA MC Reference: $12,850**

The preamplifier to replace the CAT Signature in Manley's reference line, this immeasurably more advanced product combines in one"amazing" sense of spaciousness with superb retrieval of low-level detail and an excellent sense of space. A more powerful bass than the CAT, but a more distant soundstage perspective overall. High phono-stage gain and low noise make it sensitive to low-output MCs. Inverts polarity from inputs to outputs. "Joyously musical and tirelessly entertaining," summed up JE in his review. (Vol.17 No.1)

**Pass Labs Aleph P: $3000**

Well-built preamp that SS avows as proof that "simpler is indeed better," praising it as the "quickest active preamplifier I've ever reviewed." Also drawing comment from the Stone from Boulder was its dimensionality, transparency, bass extension, top-end air, and low-level detail. In short, "the Pass Aleph P will appeal to anyone who values the most accurate euphony and frills," he concludes. (Vol.19 No.2)

**Conrad-Johnson PF2: $17955**

Borderline Class A performance, sums up MC of this modestly priced, full-function, solid-state preamplifier, commenting in particular on its sense of pace, uncompressed dynamics, and musical involvement (once it was fully warmed-up). Don't change cables with the unit turned on, warns MC. Price includes "reference-quality" MC phono stage, price without is $1395. (Vol.17 No.11)

**Conrad-Johnson PV10A: $11955**

All-tube, full-function preamplifier that CG found very appealing, particularly for LP playback. Balance is on the warm side, but there's a palpable sense of musicians being in the room that adds to the listener's enjoyment of the music. An MC favorite. Version without the phono stage costs $995. (Vol.16 No.6)

**Exposure XVIII: $16495**

This model-Ideally British preamplifier "has a fundamental musicality right from the box," enthused RD, who also found it to have "a rhythmically powerful, tight, and coherent sound." Only a touch of hardness in the mids and treble keep it from Class A status. The MC phono stage is very quiet, and, while a bit laid-back in overall balance, was one of the best-sounding RH has used. Recommended to those of whose lives LP playback remains an important part. (Vol.17 No.4)

**Krell KRC-2: $3700**

Remote-control, solid-state line-level preamp offers a number of useful features, including switchable line-level outputs to its big brother, the KRC. Requires significant break-in, found MC, but then offers a good combination of midrange neutrality, treble purity, and wide, deep soundstaging, losing out to the KRC in midrange dynamics and low-frequency "groove." FEI regarded it as looking much above 5V RMS, meaning care will need to be taken with CD processors from Kinergitics, Theta, and Timbre. Being replaced by the $2950 KRC-3. (Vol.17 No.6)

**Magnatuner Line Drive TLC-1: $9955**

This modest control center's buffered FET outputs are unity gain or less, meaning that it will be unsuitable for use with insensitive amplifiers or with components that have a very low output. With a typical CD source, however, it offers superb transparency, very low noise, and an...
As you may have noticed, the "high-end" audio world tends to congregate in small sects around many "gurus" who preach unbelievable creeds about wholly unbelievable technological breakthroughs. True to our tenet, following the teachings of our first official Danish Holyman, chief tester St.Erik "The Ear" Nielsen, we feel compelled to prevent further adoration of Golden Calves, comparable idols, and other profane fallacies.

Hence, "The Book of Truth", a musical bible containing such towering commandments as: Thou shalt not listen to speakers with undersized voice-coils, Thou shalt not listen to speakers plagued with phase response problems. Thou shalt only listen to speakers that employ one-piece MSP (Magnesium Silicate Polymer) woofer cones. Thou shalt only listen to speakers that utilize complete absorption of evil, backwards-radiated energy, and allow for virtuous, echo-free sound reproduction.

To further indulge in these and other truths from Skanderborg, Denmark, please call (847) 288-1767 or fax us at (847) 288-1853, to receive a missionary copy of our small masterpiece of true audiophile literature. In the meantime, you may ponder seeking refuge in the heavenly sounds emanating from our meticulously handcrafted speakers (like the Contour 1.3 our company raccoon, Knudsen, is preaching from), whilst on a pilgrimage to one of our few true dealers. Consequently, you may even consider recycling your former speakers as well.
almost undetectable sonic signature. Ultimately, however, its balance is a little lightweight and lacking in dynamics, which might make it worth checking out the external power supply ($295).

Passive preamps are more transparent, but only in the context of an appropriately matched system. (Vol.17 No.7)

Mcintosh C-22 Commemorative Reissue: $2500

Recent edition of classic preamp features many modern parts upgrades, but remains true to original. SS didn't think it competitive sonically with the best contemporary tube preamps, but pointed out that quality construction and conservative design promise long, trouble-free life — always a McIntosh hallmark. (Vol.18 No.10)

Proceed PRE: $1995

Had an appealingly open, sparkling, clean quality that held TJN's attention. Leanness through the upper bass and lower mid made its upper octaves seem more prominent, and the overall sound more laid-back, than the best of the competition, he opined. Bass was deep and tight, and if solo vocals didn't hang quite as palpably in space as his reference Rowland Countsmaine, they didn't miss the note by much. A DASH favorite. (Vol.18 No.5)

Small Format SFL-1: $1395 $$$

"This Canadian line-level preamplifier kicks butt!" claims D0, noting that it performs effectively with units costing much more. A hybrid tube/PET design from the pen of Joe Corio, it features an array of passive parts and careful attention paid to power supplies. Dynamics and spatial resolution are strong suits, though its reproduction of harmonic textures is strongly affected by choice of 12ATT7 tube. D0 found Chinese tubes to sound bright and grainy, the best tube being the Yugoslavian Tesla (Gold Aero), which is now supplied as standard, and which had the smoothest-sounding treble. Review sample had high output impedance. Current production has improved midrange clarity and treble smoothness compared with earlier version due to changes in wiring and board layout, as well as a reduced output impedance. GL enthusiastically agrees with D0's characterization of the SFL-1 as a "giant-killer." (Vol.15 No.8, Vol.16 No.2)

Woodside SC26: $3495

This hand-engineered British all-tube, full-function preamp has a "lovely, warm string tone... with no strain or distortion," found LG, who also noted the good dynamics and excellent LF extension and power. Superbly natural presentation of instr. music, and better than the SC26 firmly in Class B; summed up Mr. G., who notes that the Classé Six has better dynamics overall. Price includes MC/MM phono stage with integral transformers; line stage alone costs $2495. (Vol.18 No.2)

Audio Alchemy Digital Line Controller: $399 with Power Station One $$$

Versatile, compact, remote-control line-level preamp conies with Power Station One, but can be upgraded with heftier Power Station Three ($259), which, reports WP, makes a big difference. "Transparent and dynamic," he insists, and capable of showing up many a larger and more expensive unit. "A thoroughbred at any price, but a steal at its typically discounted price," he enthuses. JE concurs, although he did note a lack of harmonic richness in the mid/upper/bass/low-midrange and a loudness-dependent loss of bass heard on one, he felt the 1XLC sets a standard every manufacturer should aspire toward. (Vol.18 Nos.8 & 11)

Home HeadRoom: $599

Although primarily a headphone amplifier, the Home HeadRoom makes an excellent single-source preamp with power, accuracy, and finesse. WP found it a "bass response was excellent and there were gobs and gobs of gain — performs on an unusually high level," enthused. (Vol.18 No.1)

Mccormack Micro Line Drive: $595

"Why should only the rich kids have all the fun?" asks WP, admitting the parts quality, transparency, and overall sound of this modestly priced unit, which can be used as a conventional preamp or with selectable gain or as a passive control unit. While he deems it adequate when used with gain, he proclaims it "a contender for the best disappearing act in audio" when used as a passive unity-gain device, conceding that it shaves some heel off of recordings. Sensitive to cable capacitance when used passively. (Vol.18 No.6)

Editor's Note: There are currently no Class D preamplifiers recommended. Those with restricted budgets should investigate our recommended passive control units.


Deletions

Audio Research LS28 Mk.II, Counterpoint SA-5000, Perfectionist Audio Components CPR HIB/TIPS not auditioned in a long time; Melos SHA-1 replaced by SHA Gold, currently under review; Classe Six Mk.II discontinued.

Passive Control Units

Editor's Note: While many audiophiles feel that a passive control unit has the potential for offering the highest possible sound quality from line-level sources such as CD, it must be used with the utmost responsibility for driving the interconnects, the passive unit, and the power amplifier input is handed over to the source component, which may not be up to the task. Careful auditioning will be essential in putting together a musically satisfying system around a passive unit.

Carver Research Lightstar Direct: $1995

Preamplifier can be used as either a passive, balanced design, boasting minimal componentry in the circuit, or as a single-ended, active preamplifier. SS was not impressed with its performance as an active device, finding it "unmistakable... Class C." In passive mode, however, it was "simply the best preamplifier I've ever heard for under $2500." Careful system matching is necessary to derive that level of performance — the Lightstar is "unswerving" to drive high voltages into low impedances. That said, highly recommended for those with completely balanced systems. (Vol.19 No.2)

Electronic Visionary Systems Attenuators: $230-$450 $+

RH enthused over the transparency offered by these passive control units, sold only by mail order. The dual-mono Ultimate Attenuators, which plug either into the power amplifier's input sockets or a CD player's output sockets, cost $230/pair with 12-position unbalanced attenuator, $305/pair with 24-position balanced attenuator, and $450/pair with 24-position attenuator. Those primarily interested in CD-related attenuators should investigate these well-made units. EVS — Tel: (510) 548-3665. (Vol.13 No.7)

Mccormack Line Drive TLC-1: $995

Although the McCormack docs have buffers and gain switches, its passive outputs are the most transparent; JA has heard, if a little laid-back in

absolute terms. Highly recommended, says he. (Vol.17 No.7)

B

Mccormack Micro Line Drive: $595

"A contender for the best disappearing act in audio," proclaimed WP of the MLD used as a passive unity-gain device, while conceding that it shaves some heel off of recordings. Sensitive to cable capacitance when used passively. Not far behind the T-1C. (Vol.18 No.6)

Pure Sound Systems Model 500: $335

RN feels it bears a lot of similarity to the inexpensive, dual-mono, four-input device "will get you most of the way there as far as a control center is concerned." "A humdinger," says ST. "It's basic, it's simple, the parts quality is high... everything else messes up the sound of my Meridian 50B by comparison... I use it in my main system." Very similar Model 1000 ($465) adds more inputs and is more versatile. (Vol.17 No.8)

Moving-Coil Step-up Devices/Phono Preamps

Expressive Technologies SU-1 transformer: $3500 $+

A 35-lb step-up transformer that offers "utter transparency" and "exquisite resolution," according to RH, JA agrees, finding its LP sound without the SU-1 feeding the Mod Squad Phono Drive's MM input to be deliciously transparent and musical. Unless used with Expressive Technology's own interconnects, however, it may be impossible to avoid excessive hum pickup. Needs to see a 4kHz ohm load impedance with low capacitance. Otherwise, the sound quality will be overall dependent on the preamp's MM-input characteristics. (Vol.15 No.7, Vol.18 No.1)

Levinson No.25: $3990 $+

Available in High- or Low-Gain versions, this MC line-level phono preamp features identical circuitry to the phono section of the No.26. Above price includes PLS-226 power supply. Price without, for those who want to power it from their No.26 power supply, is $2955. Needs careful positioning to avoid hum being induced into its circuitry from the power supplies of other components. LAV reference. (NR)

American Hybrid Technologies AHT-P: $2700

Very quiet solid-state MC line-level RIAA equalizer/preamplifier with separate power supply. Can be set up for optimal gain/impedance match with the user's MC phono cartridge. JS was impressed with the unit's transparency, neutrality, and pace, though he decided to keep his CAT SL-1 Signature overall. (Vol.16 No.12)

Audio Research PH1: $1495

"Remarkable in its sense of focus, delineation of individual instruments within the soundstage, and transparency," said RH of this phono preamplifier/RIAA equalizer. He did point out a somewhat lean, too incisive balance that keeps this unit from Class A performance overall. Requires careful system matching. (Vol.18 No.12)

Gold Aero DB45 Signature: $999

SS was impressed by the balanced nature of the db45's harmonic presentation, finding it airy, sweet, and well-defined. Though the db45 was not as "dead" in the background as his reference Voss 1051, it couldn't be found that it reproduced space and air in a satisfac-

Stereophile, April 1996

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"Every reviewer who writes about wire should have a Wireworld Interconnect Comparator, so should every retailer who sells cables... I've never experienced an easier, less stressful way to audition cables. And the findings are terrifying... especially if you feed the output into a headphone amp for even more vivid results... My worst fears were confirmed about certain over-hyped wires, while I was relieved to find that some of my faves did survive the tests with dignity intact."

Ken Kessler, HI-FI NEWS & RECORD REVIEW, Oct. 1995

"The Comparator is extremely revealing of an interconnect's sound, and is an invaluable tool for judging interconnects."

Robert Harley, STEREOPHILE, Vol. 18, #11, Nov. 1995

"It is obviously apparent that this splendid device, beyond simplifying the lives of reviewers and retailers, is destined to bring pleasure to many dedicated listeners."

Bebor Moroni, SUONO, Italy, Sept. 1995

"As soon as I replaced my reference powercord with Aurora, I knew this was no ordinary cable; the lower bass became lower, and at the same time, the resolution improved. The Gold Eclipse also sounded extremely neutral and vivid, and seems to be capable of supreme tuning ability for the total system. Once again, the magic of the audio world is restored."

Makoto Akikawa, AUDIO ACCESSORY, Japan, Summer 1995
tory manner. "An outstanding value," he summed up, "if your preamp has adequate gain — passive units need not apply." Standard version (not reviewed) costs $799. (Vol.18 No.9)

Krell KPE: $1000 $$$
Borderline Class A, says MC, of this add-on phono preamplifier/equalizer for the Krell KRC-2, offering "a precise, tightly focused soundstage, an unusually fine dynamic range, and crisp, expressive, and spacious sound." Can only be powered by the KRC-2's AC outputs. (Vol.17 No.6)

Sonic Frontiers SFP-1: $1095 $$$
Tubed unit with what RH called "a delicious midrange bloom," a complete lack of grain, etch, and hardness, and stunning soundstaging, particularly in its MM mode. (MC mode adds a class-A FE stage to the tube circuitry.) Final review sample had a shelf-dovetail treble due to an out-of-spec RIAA stage capacitor. The second sample had a flat RIAA response, which ameliorated RH's earlier criticisms of an "overall soft sound" and a lack of "air, immediacy, and detail." "A terrific bargain," was his final verdict. MF demurred after auditioning the Signature version.

"Its relatively high noise floor and only moderate gain cast a grayish veil over the soundstage and imparted a sluggish rhythmic quality to music when used with MCs, he felt. (Vol.16 Nos.9 & 10; Vol.19 No.2, Signature.)

C

Audio Alchemy VAC-in-the-Box: $259 $$$
SS found this unit to "represent a giant step forward in entry-level phono gear," but felt it lacked palpability compared to the best phono amps. WP and MF respond. "Your point being?" Topnotch construction and user-adjustability transcend any expectation for this price point, they contend. It sounds good, too. (Vol.18 Nos.8 & 9)

K

Naim Prefix, Audio Research Ph3, FM Acoustics FM-222, Rotel RHQ-10, Jadis DPMC.

POWER AMPLIFIERS

Editor's Note: Due to the disparity between typical tube and solid-state "sounds," we have split Class A into two sub-classes. Nevertheless, even within each sub-class, Class A amplifiers differ sufficiently in character that each will shine in an appropriate system. Careful auditioning with the use of good headphones is therefore essential. Note that, except where stated, output powers are not the specified power but those we measured into an 8 ohm resistive load. All amplifiers are stereo models, except where designated.

A (Tube)

Air Tight ATM-2: $8750 ☣
An 80Wpc classic stereo tube design from Japan that eschews the use of printed circuit boards in favor of point-to-point wiring. "The most refined [push/pull] tube amplifier money can buy... a magical midrange," according to DO. Though its highs are free from grain or hash, the Air Tight does have a rather low threshold when compared, for example, with the Audio Research Classic 60 — a point that bothered ST. "Sounds like a more refined Quicksilver," says RH. Its low bass, too, is less well-defined than the other Class A amplifiers we've heard, and it really needs to be used with speakers having 8 ohm impedances. As of 10/93, DO laid problems at the frequency extremes squarely at the feet of the original Chinese KT88 tube complement. "No longer a refined Quick- silver," he reported after his experience with the Gold Aero KT88. "The needs to be reduced more, even the high watermark, and the deep bass tightens up considerably." Note that the KT99A requires at least a 20-hour break-in. (Vol.13 No.5, Vol.16 No.10)

Air Tight ATM-3 monoblock: $13,995/pair
This Japanese amplifier's midrange is pure and liquid in the classic tradition, with full-bodied lower registers and the uitmost clarity. Note that the pristine audiofiles have come to expect from modern tube designs. Reproduction of dynamic and rhythmic shadings is outstanding, even with difficult loads such as Sound Lab A-15. The best-sounding ultralinear output stage DO has heard to date — the Air Tight's own — prefers the sweeter sound of the original KT77 to that of the stock EL34. Note that the KT77 does not work in triode mode, drastically curtailing distortion-free power delivery. With EL34, the triode mode creates the midrange performance a tube aficionado could hope for, but at a steep price in sweet and suave, but sacrifices half the available power: 60W vs 135W. (Vol.16 Nos.6 & 10)

Audio Note Kassini Silver: $52,600
(See JS's review elsewhere in this issue.)

Audion Silver Night 300B monoblock: $3990/pair
"A beautiful, refined sound, a super, sweet midrange, and rather good bass, too, for a 20Wpc tube job," feels ST of this push/pull, 300B amplifier. "Not at all a little more jazzy sound, truth of timber," he says, than the Cary CAD 300B. (Vol.17 Nos.2 & 6)

Audio Research VT150 monoblock: $12,990/pair
The finest yet from ARC, this 130Wpc power amplifier is devoid of feedback, liquid-sounding, and grain-free, with an accuracy of timber and a level of detail that RH found "astonishing." While it doesn't have the punch of a Class A solid-state amplifier such as the Krell KA3-3005, RH felt the VT150 to give a more palatable impression of there being an acoustic double-bass in his listening room, with a greater sense of openness, bloom, and space in the lower registers. "Sets the standard in liquidity, soundstaging, and sheer musicality. Deep, layered, and very transparent soundstage — truly transcendent — is how he sums up his feelings, just in case you misunderstood. "Magnificent, big-hearted, truly Class A Plus," enthuses MC. Output impedance from the 4 ohm taps is a low 0.3 ohms, minimizing any response interaction with the speaker loads. Cosmetically different SE version costs $15,990/pair.

Balanced Audio Technology VK-60 monoblock: $4495 each
"Offers the natural rendition of instrumental/vocal timbres that the best tube amplifiers are known for, and drives most of the speakers to very satisfying volumes," opined RD, who also was impressed by the three-dimensionality of the soundstage. He found the 35W BAT — it gives 35W at a relaxed 3W THD limit — "quite special when it comes to harmonic accuracy." Bridgeable. (Vol.18 No.12)

Bel Canto Design Orfeo SE2 monoblock: $7590/pair
Exquisitely smooth and refined mids coupled with a slightly laid-back perspective are this single-ended tube amp's most compelling sonic traits, says DO. Unusually for an SE amp, no excuses need be made at the frequency extremes. Its sound is spatially impressive, yet it lacks the dramatic vividness of, say, the Cary 805. The output is limited to about 25 clean watts, which dictates that it be used with low impedance and grain-free, and a benign impedance. Soviet 12AX7WXT dual input triodes are now supplied as standard. (Vol.17 No.7)

Cary Audio Design CAD-805 monoblock: $8495/pair
A classical, single-ended design, the 805 squeezes some 30 clean watts out of a single 211 power triode driven by a 300B. There are weaknesses at the frequency extremes, but the real glory of this amp is its reproduction of the core of the musical message. Midrange textures are vivid, and the senses of space and time are so believable "you'll embrace instrumental outlines with outstretched arms," says DO, who feels that the results from "our audio roots" has redeemed him for what high-end audio should be all about. Used full-range, the 805 requires a loudspeaker with a benign impedance magnitude and at least a 90dB/W/m sensitivity. But when optimally matched, "the Carys aren't polite, ain't laid-back, and need make no apologies about their performance anywhere up and down the frequency line!" enthuses MF, who uses them with Audio Physic Virgos. (Vol.17 Nos.1 & 2)

Cary Audio Design CD300SE monoblock: $3795/pair
These are the magic Carys! exclaimed ST. "They have a way of making the music come alive that I have not heard from any other amplifier... Palpable presence in spades!" Bass, while notable on Krell territory, is still tight and tuneful. However, at just 12W power output, it will be very hard to find a matching loudspeaker. (Vol.16 No.11)

Conrad-Johnson Premier Eight monoblock: $15,995/pair
Massively powerful all-tube amplifier — measured clipping point was 193W into 8 ohms — that occupies pride of place in JE's system. A tube-lover's dream come true: electrifying dynamics and the best bass JE has heard from a tube amplifier is coupled with superb soundstage, air and presence. Output tubes are 6550As. (Vol.17 No.12)

Conrad-Johnson Premier Eleaven A: $3495 $$$
While the original version of this beautifully made 70Wpc tube amplifier failed to light ST's fire, MC felt that, while its strengths may be subtle, the Eleven should not be underestimated. Current "A" version incorporates minor modifications to make this Class A amp sound even better; thinks WP, who cites an increased sense of slam and articulation as the primary improvements. JA is impressed by the natural and unvarnished soundstaging, and finds the unit a must-audition for those in love with the human voice. (Eleven, Vol.17 Nos.2 & 10; Eleven A, Vol.18 Nos.8 & 9; Vol.19 No.3)

Jadis JA 200 monoblock: $23,880/pair
A superb amplifier offering an honest 130W that, according to DO, outdistances its competition primarily in the area of soundstaging, where it unfailingly provides panoramic and enveloping images of the recording original venue. Although harmonic textures are fluid in the best tube tradition, DO obtained the sweetest mid with substituting good EL34s (Gold Aero E434L) for the stock 6550s; JS likes Tung-Sol 6550s, but while N.O.S. AEG 8025 input tubes to replace the Gold NA12AUS. This amp does not sound romantic, cautions DO, who finds that the lack of flash through the lower mids argues for a mating with a warm-sounding front end. Although DO tried various line conditioners, JS found the Jadis to give their best when plugged straight into dedicated wall outlets. Read his Follow-Up for the full tweaking dance. (Vol.16 No.11; Vol.17 No.3; see also JS's review of the Timbre TT-1 in Vol.17 No.4.)

Jadis Defy-7 Mk.II: $7995 ☣
Super dynamics, says ST, perhaps at the expense of Jadis's traditional subtlety. MC adds that this physically massive, 100Wpc stereo tube amplifier has the ability to drive awkward loads to high levels, with authoritative bass reproduction. Musically, it has "a lot of gold," he enthused, adding that its sound is superbly coherent, grainless, and detailed. (Vol.14 No.9, Vol.16 No.4)
The New Reference in Digital Playback

Now's your chance to get on the bus...the I^2S bus

The first transport to offer the I^2S bus digital data output format providing a jitter-free link to Alchemy's DTI•Pro32 or DDE v3.0

Features the new-generation Pioneer "Stable Platter" based engine

All clock signals are generated via a proprietary, high-accuracy, ultra-low jitter (2 pS) internal master reference oscillator

External power supply utilizes four separate transformers and employs 12 low-impedance regulators/buffers to provide filtered, low-noise DC S/PDIF data – clocked to master reference oscillator for jitter-optimized output – is provided via BNC coaxial and AES/EBU (standard), or ST glass (optional)

Controller and display interface are each enclosed in their own shielded environments; chassis is resonance damped for additional isolation.

Complete with full-function remote control and detachable AC mains cord with integrated line filtering
Jadis SE300B monoblock: $13,000/pair
These SE triodes generate a "beautiful tonal palette and [a] giant acoustic," opined JS, who felt so not much that they replicated the sound of the master tape, "but actually transcended[ed] the mechanisms of reproduction to the acoustic event itself." Their balance of sound is "stunning in its total naturalness, ease of presentation, exuberance, and nuance," he averred. All this and 10Wpc, too—but it sounds like much more," affirms ST, who was "stripped of all unworkable sense of spaciousness, and given a presentation of low-level detail and air. ST exulted, "such is the glory of Jadis that all of this detail is rendered in the most musical manner imaginable." TJN, uncomfortable with their bench results, recommends careful audition before purchase. Western Electric 300B tubes add $2000 to price. (Vol.19 No.3, 2, & 3)

Manley 440 monoblock: $12,000/pair
This marnmoth monoblock can be switched to either triode or pentode operation, and provides for adjustment of global feedback and rolloff of ultrasonic frequencies. As a result, JS found it suffered somewhat from multiple-personality syndrome. However, he did find its presentation musically inviting and gorgeous-sounding under the right conditions. In triode mode it delivers 160W/155W (Vol.19 No.12)

Manley SE/PP 300B monoblock: $4200/pair
Amp can be used in push/pull or SE configuration—and can be switched back and forth while playing. Also features adjustable global feedback. ST noted that the open-frame enclosure capable of housing speakers other SE amplifiers couldn't. Comes "very, very close" to sound of costlier amps such as the Wavelength Cardinal and the Jadis 300B. (Vol.19 Nos.1 & 2)

Myer Reference RM-9 Mk.II: $3440 $$$
Though D0 felt the alternative KT88 output tubes made the sound too vivid, this 125Wpc stereo amplifier, when equipped with less-expensive EL34s, is the best one to come from Roger Modjeski. "Harmonic textures are sweet, liquid, and warm and capable of compelling speakers other SE amplifiers could not. Comes "very, very close" to sound of costlier amps such as the Wavelength Cardinal and the Jadis 300B. (Vol.19 Nos.12, Vol.17 No.10)

Quicksilver M-135 monoblock: $6500/pair
He noted the designed 135Wpc monoblock that can use a wide variety of output tubes — although ST preferred the sound of EL34s. "It's classic tube," he asserts: "smooth, sweet, dimensional, and powerful as hell." Powerful but liquid at the same time, he tells us. Bass is full, but is not tight by solid-state standards, and he would not recommend open floor placement to parents of toddlers, due to sharp corners on faceplate. His conclusion: "The best pentode amps I've had in my system." (Vol.18 No.12)

Vivace Amplification Company Renaissance Seven/Seventy: $9980
This beautifully made 65Wpc (for 396 THD), dual mono-push-pull amplifier uses 300B output triodes run in class-A, and features user-selectable loop negative feedback. (The best measured performance is achieved with internal feedback, but output impedance is then a very high 2.1 ohms, which will give major response modifications with almost all speakers.) Still, "The VAC's poetic beauty lay in its stunningly realistic midrange," enthused JS, also noting the remarkably accurate and tight bass. "The bass is a little boomy, however. (Vol.17 No.12)

Wavelength Audio Cardinal monoblock:
$5250/pair
Wavelength Audio Cardinal XS monoblock: $7500/pair
JS was entranced by the openness, specu, and re-

ble clarity exhibited by the XS version of this SET amplifier. Particularly impressed by his level of musical involvement, he mused, "How easy it seemed to reach into, to caress, to feel, to understand the music I heard ... I came to understand that these tube sets were not just a work of art — single-ended Unbeatable Lightness of Being — breathed the very life into the sound." ST marveled at the basic version's truth of timbre and harmonic beauty, but found them a tad slow. TJN feared the crossover circuit might not have been acceptable in 1940, but seemed mediocre for a contemporary design. He allowed, however, that measurements appear beside the point with this sort of design. (Vol.19 No.1)

A (Solid-State)
Forsell The Statement: $30,000
"The Statement has the power to inspire," JS decrees. "You not only listen to music through the Forsell — you experience it as well." He finds it acoustically enveloping, with awesome bass capabil-
ities and harmonically rich upper frequencies, achieving an appealing balance of sound and sounding effortlessly muscular at all times. Extremely sensitive to AC quality, he warns. TJN finds the test results uneconomic, given the amplifier's lofty price. JA was disappointed by the presence of what sounded like old-fashioned crossover distortion. (Vol.18 No.8)

Jeff Rowland Design Group Model 2: $5800
"What do you define value in an audio compo-
"nent?" queries RJ, before deciding, "I can't think of a less expensive amplifier that fully matches the 95Wpc Model 2's collection of sonic virtues which he defined as "open, clean, and extended top end, stunning transparency, dynamic liveliness, and firmness of bass response. Capable, he claims, of making you forget about amplifiers and just listen to the music. (Vol.18 No.8)

LAMM Model M1.1 monoblock: $13,980/pair
"They've got soul, baby," enthused JS of these hybrid 140Wpc monoblock power amps; "the magic that makes it all worthwhile." He also admired the "enormous, extremely airy, and transparent soundstage they threw... The bass was nothing short of phenomenal... deep, taut, terrifically impactful, redolent with tonality and individualism. Make sure you take the time to hear a pair." (Vol.18 No.4)

Mark Levinson No.331: $4550 $$$
LG found the 135Wpc Levinson to possess quick-
ness, stunning impact, and remarkable transparen-
ty. "The No.331's build quality is up to the highest standard found in high-end products today," he asserted. "This amplifier's sonics, superb parts qual-
ity, overkill power supply, reduced price compared to its predecessor, and five-year warranty offer its owner a lot of value for the money, and bring a Class A recommendation from me. Preliminary auditioning by JA of the more powerful No.333 indicates that overall it is the best-sounding Levinson amp he's heard (through the discontinued No.206 monoblock still had the ultimate in bass slam)." (Vol.19 No.1)

Pass Labs Aleph 0 monoblock: $7000/pair
With the exception of JE, the magazine's review-
ers were pretty much unanimous on the virtues of this single-ended 90Wpc. "Impressive Nelson Pass design: true Class A. Neutral-balanced rather than euphonically sweet in the manner of a classic single-ended triode design, the Aleph 0 offers superbly transparent, musically natural detail retrieval and dimension. A breakthrough product," concluded DO. SS bought a pair to use with Avalon Eclipse speakers — "Class A with a bullet" he said. Low input impedance mandates careful preamplifier matching. (Vol.18 No.3)

Spectral DMA-180: $7995
Well-built 240Wpc solid-state design that was reviewed as a component of the Spectral/Avalon/ Mit 2CSD system. RH discovered that "playing records and CDs I thought I knew produced an exciting sense of discovery as I heard their musical nuances and expressiveness fully revealed for the first time." He was also impressed by this well-made 150Wpc German design. He adds, however, that its presentation is on the dry side compared with the best tube models. (Vol.15 No.2)

Symphonic Line Kraft 400: $25,000/pair
Noteworthy as the not-inconsiderable price, JS asked, "what could be [so] entirely special about a pair of amplifiers?" "Everything," he answered. He wallowed in their "richly complex and textured, power-
fueful, transparent, and [huge] soundstage," and mar-
veled at their effortless articulation. Additionally, he made note of the 250W 400s' deep, taut, powerful bass. TJN, on the other hand, grumbled about the fit'n'finish and what he felt to be an unjustifiable expanse of empty space within these mammoth amplifiers. He also observed that JS experienced system failure on one of his tests and that failed under test—not trivial considerations, given the price asked, he opined. (Vol.18 No.11)

Threshold T-200: $4450 $$$
RJ valued the balance of attributes in this IGBT-based-class-A, direct-coupled, minimal-feedback, 125Wpc amplifier, praising its everything-in-propor-
tion-proportion coherence. Midrange neutrality and spatial and timbral definition were all superb, he reckoned, but he found its major strength to be its reproduction of treble frequencies. However, he cautioned, audiophiles with large listening rooms and/or insensitive speakers might find the T-200 lacking in power. TJN added reservations regarding its interaction with preamps when run in bal-
anced mode, due to its very low input impedance. He counsels careful matching—or using it single-ended. Price is for black finish; silver pewter finish adds $100. (Vol.18 No.4)

YBA 2 HC: $3750 $$$
Well-engineered, slim-line 110Wpc dual-monaural amplifier from France features short signal paths, high part quality, and "a superbly transparent view of the soundstage. We all... like that feeling of a little soft in absolute terms, but well-defined, combined with an excellent sense of pace. Overall, a musically natural presentation — ultra fidèle. (Vol.17 No.1)

A (Integrated)
Cary Audio Design CAD-300SEI: $3695 $$$
Stereo, single-ended, tube, integrated amplifier related to the Cary 300SEE monoblock. Casting an eye toward the measured response of the 300SEI, RH rapturously exclaimed, "My head tells me the Cary can be no good; my ears and heart say this is this most involving and communicative amplifier I've heard." "It's actually a tone control, and an unremarkable one at that," adds JA, grumpily. (RTP will admit under pressure that the sound of his B&W Silver Signature drivers (done by the Cary was first-rate). RH regards the ultrasonic, smooth sound of the 300SEI to be world-class, manifesting a warmth and beauty unmatched by any electron-
ics he's had in his system. Output of 11Wpc tops, limited dynamics, somewhat shelved-down treble region, and, shall we say, idiosyncratic test results demanded extensive auditioning with your preferred loudspeakers before purchase. (Vol.18 No.9)

Boulder 500AE: $4950 $$$
Das feels this well-made, 150Wpc solid-state stereo amp, based on the late Deane Jensen's dis-

Stereophile, April 1996

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POWER AMPLIFIERS
Listen Past the Equipment and Experience the Music as Intended

Once in a while an idea comes along which represents a significant step forward in advancing the current state-of-the-art. We feel our new ST Series amplifiers exemplify this unique distinction.

A new approach to low-noise, low distortion signal-path has produced a line of amplifiers which is actually quieter and more transparent than any source material currently available.

Bryston ST amplifiers, from the top: 8B ST 4 channel 120 wpc, 5B ST 3 channel 120 wpc, 4B ST 250 wpc stereo, 7B ST 500 watts mono. Not shown is the 3B ST 120 wpc stereo.

The Bryston ST innovation: our ultra-linear "input buffer-with-gain" substantially lowers the distortion and inherent noise floor — hearing is believing.

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Bryston Ltd, P.O. Box 2170, 677 Neal Drive, Peterborough, Ontario, Canada K9J 7Y4 Tel: (705) 742-5325 Fax: (705) 742-0882
crete op-amp topology, is "the most natural-sounding amp I've used," though he points out that, to get the best from it, you need to use it with a preamp lacking dryness. LL, SS, and JGH would all argue for a Class A rating for the 500AE. JGH feeling the Boulder to be the most accurate amp for kid stuff. SS thought there was nothing reticent about the top, the highs being "smooth but not sweet," he found the Boulder's presentation of midrange detail "was nothing short of remarkable ... Highly recommended!" says LL. "Some will claim that it sounds too vort, too forward, but I think it sounds so much more real than I thought possible." Though he agrees with JGH that the 500AE has superbly powerful, well-defined, and extended bass, RH does find its overall sound too warm and "lacks the authority that very high Class B/borderline Class A is about right. LL, SS, and JGH found the 500AE's sound to be significantly improved in that it becomes smoother and less dry when a pair are used as bridged monoblocks. XLR sockets are wired to IEC/AES recommendation with pin 3 hot, leading to inevitable polarity. Optional handles are $325. The otherwise identical Boulder 500 adds meters and other ancillaries and costs $5800. The 500M ($5600) is also identical to the 500AE, but features metal-casting and interlocking electronics. (Vol.9 No.5, Vol.14 No.10, Vol.15 No.14)

Carver Research Lightstar Reference: $3995

Innovative, powerful (350Wpc) power amplifier that impressed RD with its dynamics and sense of power in reserve, while sounding impressively neutral. But, while it's very good, it lacks the focus of other top contenders. The Lightstar falls short of overall transparency, seeming slightly veiled—although RD concedes this to be a very small distinction. A good match with speakers requiring wide dispersion or a sense of air, this might benefit those who feel that button and controls.

Cary Audio Design CAD 300B: $3295

Classic 300B sound from this push-pull amplifier: a smooth, sweet midrange, with triode purity. ST found the bass to be surprisingly tight, tuneful, and well-defined. Long-term $500Wpc—30Wpc—means the matching loudspeakers are relatively sensitive. (Vol.16 No.1)

Celeste 4070: $1195 $$$

Hard-to-impress SS hailed the 80Wpc 4070 as "the first moderately priced amp Pave had heard that honestly, in detail, handled the big tunes," praising its transparency and a low-level detail to be exemplary. He also praised its frequency extension and ability to unravel complex passages. However, he felt it erred slightly toward the thinness and lack of bass that big tunes require. (Vol.15 No.3)

Counterpoint Natural Progression NPS-100A: $2495

This powerful (760Wpc) solid-state amplifier has Stereophile's reviewers and readers divided. Sounding rather dry overall, with a thin treble, the Crown's lean balance will lead to care having to be taken in system matching. A "clear, quick" character, according to ST, who stands by his recommendation. D0 found it to work quite well with Sound Lab A-1s, with this Crown does "an amazing job of causing mid-level dynamic loudspeakers to sound more musical, involving, and three-dimensional than they have to a right." LL, however, found that the least expensive of the budget solid-state amplifiers he had ever heard in that it lacked harmonic accuracy and dynamic shading. JA also was not impressed, RN summed it up best: "The real question is, can the Crown Macro Reference survive the zealotry of its followers?" (See "Letters," Vol.17 No.15-25, and No.4, pp.11-13.) Fans can be noisy.

Forte 4A: $1795 $$$

An amp that really sounds great, decided CG, adding that it goes "gasp" with greater enthusiasm. The 50W solid-state amplifier has a right to. He also praised the sweet but vividly detailed high frequencies and terrific pitch definition in the bass. Added RH: "A remarkable absence of grain and glare." (Vol.15 No.11, Vol.16 No.7)

Manley 175 monoblock: $4800/pair

While still the finest David Manley-designed amplifier DO has heard, the 175's superb soundstage is laid down by a rather laid-back midrange and overripe lows, thought DO. Though the Manley's liquid midrange veers toward the seductive, the bass is immaculately balanced with a reduced sense of pace. Output tubes are 1288/6L6WGCs; worth experimenting with alternatives, concluded DO, but be sure to check with the factory first. Specified clipping power is 144Wpc, but actually measured was 350Wpc. (Vol.18 No.8)

McCormack Power Drive DNA-1: $1995 $$

Beautifully made, this relatively inexpensive 175Wpc solid-state amplifier had RH waxing lyrical about its sound: "... warm, sweet, punchy, and beguiling." With a more laid-back, less dry balance than the Boulder 500AE, the DNA's soundstage presentation featured a superb sense of palpability, noted both RH and JA. A pair wired for bridged-mono operation costs $4595. "A strong Class B product that is knocking on the door of Class A."—RH. Deluxe Edition ($2355) has premium parts quality and gets even closer, making it one of the best bargains in audio. (Reg. Vol.15 No.4, Deluxe, Vol.18 No.3.)

McCormack Power Drive DNA-0.5: $1295 $$

Smaller—120Wpc—sister to the DNA-1, the DNA-0.5 floated TJN's boat in a big way: a palpable midrange, crisp transients, air and detail to spare, and plenty of punch to percussive bass. An Alcadian amp, it "has a very liquid, the open sound in the round! ST concurs, calling the Special Edition version ($1695) "an incredible achievement... a totally honest, no-Bs product" and "one of the best amplifiers, period." (Vol.20 No.2 & 12)

McIntosh MC275 Commemorative Edition: $3995

A well-made reissue of a classic 75Wpc tube amp, with a forward balance and very dynamic sound—"punches out the music"—and excellent overall clarity. Bass is a "bit wild and out of control," said ST. (Vol.18 No.9)

OCM 500: $2895

SS felt the 260Wpc 500 best suited situations requiring heavy wattage and current and high damping capabilities. While not possessed of the last word in D-digit imaging, it did manifest "extremely transient speed, credible articulation of innerdetail, and fine low-bass extension." Mild HF hardness may be exacerbated by speakers sharing the same tendency. "Solid Class B," adds MF. (Vol.18 No.9)

Parasound HCA-2200 II: $1795

This reworking of an initially disappointing 250Wpc design from John Curl succeeds in spades, offering "Class B sound at a Class C price," according to SS. While its treble is a little on the tizzy side and not as graceful as that of the Boulder, and the midrange is not as liquid as that of MF's reference VT-1s, the Parasound offered otherwise neutral sound, with great authority and a prodigious, effortless bass. (Vol.17 No.3)

Proceed AMP-2: $1995

TJN finds the sound of this affordable 150Wpc stereo amplifier gripping—a detailed, full-bodied quality revealing every nuance without extending into hyper-detail. The bottom end sounds deep and tightly controlled, while at the opposite end of the scale the sound is pristine, albeit with a trace of dryness at the top. Some may find it too full-bodied, yet it struck him as accurately portraying what's on the recording. Also a favorite of DAS, who feels it works best with speakers having "lots of uncolored meat on the low end." The three-channel AMP-3 ($2995) is identical other than using three rather than two amplifier modules. Upgrade from two-channel amplifier to three-channel costs $1000. (Vol.18 No.5)

Sonic Frontiers SPS-80: $2895

Well-thought-out 80Wpc tube design with much use of premium parts. RH said it sounded typically tube, slightly softened on top, but with a warm, rich midrange character. He also felt its soundstage depth was slightly foreshortened. While KK prefers the McIntosh MC275, ST thinks the SPS-80 "has tight bass and the ultimate resolution. He found it worked much better with Czech Tesla EL34s than with Serbian KT88s from Gold Aero. "A good, solid performer." (Vol.16 No.4, Vol.17 No.2)

Sonic Frontiers SFM-160 monoblock: $4495/pair

"Classic tube sound on steroids" is how DO characterized the sound of this high-powered (160Wpc) tube amp—"but only when configured with Sowtek 6922s in the front end, which Sonic Frontiers confirms are now standard in production. WP agrees that the sound with the earlier standard 6DJBs is uninviting. A rare blend of brawn and finesse: lots of "palpable" tube watts coupled with warm, liquid, and sweet harmonic textures. Very high output impedance requires care in speaker matching. (Vol.17 No.6)

Valve Amplification Company PA80/80: $2790

"Has tube magic in spades" averts WP of this 80Wpc design (3% THD); he found it warm, dimensionally, and beguiling. HP attributes some of it to the parasitic nature of his tubes. The amp, with its three-dimensional sound, is the battery character of classic tube amplifiers, notes LG of this British 45W tube design, descended from the classic '60s designs by the late Arthur Radford. He recommends it for use with Quad electrostats. (Vol.17 No.6)

(Restricted Amplifiers)

Arcam Delta 290: $899 inc. remote $585

A spacious, three-dimensional sound, a well-focused soundstage, a rich midrange, and an open, spacious, and treble, but not too much. The amplifier's sound, being rather than the battery character of classic tube amplifiers, notes LG of this British 45W tube design, descended from the classic '60s designs by the late Arthur Radford. He recommends it for use with Quad electrostats. (Vol.17 No.6)

Woodside MA50 monoblock: $4495/pair

A spacious, three-dimensional sound, a well-focused soundstage, a rich midrange, and an open, spacious, and treble, but not too much. The amplifier's sound, being rather than the battery character of classic tube amplifiers, notes LG of this British 45W tube design, descended from the classic '60s designs by the late Arthur Radford. He recommends it for use with Quad electrostats. (Vol.17 No.6)
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A really nice MM/MC phono stage to boot." Optional MC/MM phono board costs $100. (Vol.17 No.7)

Arcam Xeta One: $1900

An unusual product that eschews many features common to A/V receivers, this integrated A/V amplifier provides an unusually exalted level of musical reproduction, according to RH. At the same time, he notes, its reproduction of video soundtracks does not meet up to its musical performance. "In judging the quality... it is too deceptively, lacking the low-level resolution, ambience, and diffusion present in the finest A/V receivers." (SGHT1 No.2)

C

Acurus 200X3: $995

RD was struck by "how dynamic the system sounded with the three-channel 200X3 driving the front speakers." Bass and dynamics, he felt, were first-rate—but added that, in his reference music-only system, the 200Wp amplifier sounded "a bit rough around the edges." But, he continues, "it's contrary to my impression of the 200X3's sound in my main audio system, I was not aware of any added roughness" when used for Home Theater. Recommended, he asserts, "especially to those who place dynamics at the top of their wish list." (SGHT2 No.3)

Audio Note Silber OM-150: $1195

"Pucks punch and power in an attractive package." LH alliterates, finding the 170Wp unit "to have a good thing going from the midrange on up, with outstanding spatial presentation, a salutary film-noir ambiance, and a lack of glare or harshness." Citing the devil down below, he finds the bass "to be a little too much of a good thing" in systems already tilted toward excessive warmth. JA finds that this reduces the sense of pace, which will be a factor in system matching. Early production models have had problems with writing in PSUs—150M optional outboard power supply ($349), which transforms the '150 into a true dual-mono design; LB's Follow-Up verified the improved performance available with a correctly wired supply. (Vol.18 No.9)

Audio Electronics SE-1: $1295

This modestly powered (8Wpc) single-ended amplifier from a subsidiary of Cary Audio sounds somewhat like the more expensive, more powerful Cary 300SE, though ST, due to itspalpably present and truth of timber. No dynamics to speak of, however. The price is for the version supplied assembled and fitted with Ceron 300B output tubes ($1915 in kit form). (Vol.17 No.11)

Bryston BD ST-TTHX: $2950

Four-channel amplifier that TJN recommends for Home Theater use, though noting that it is a "bit pricy" for what it offers. Warm-balanced and a bit richer than life, he summed up, pointing out that the Bryston is worth exploring for a bi-amped stereo system. (SGHT1 No.2)

Chord C-300: $1498

"Power combined with delicacy" is how RD described the sound of these identical amps, differing only in the number of channels. "Fit/finish are a definite cut above what one expects at this level," he elaborated. "As of now, they're my favorite amplifiers in this price range." Borderline Class B, he sums up. (SGHT2 No.1)

Carver AV-806X: $1750

"I was expecting competent performance; what I got was something close to TJN's description of what a six-channel Carver. "A little soft at the frequency extremes, but wonderfully sweet and listenable... My favorite current multichannel amp." Borderline Class B. (SGHT1 No.2)

NAD 208THX: $1645

"Very powerful... almost 320Wp — solid-state design with excellent bass extension, authority, and control, decided TJN, but not as liquid-sounding in the mids as the similarly priced McCormack DNA-0.5. High sounds surprisingly soft, perhaps even a little dark, leading to a lack of space in ultimate terms." (Vol.18 No.2)

Parasound HCA-1206: $1950

"Dynamic, punchy, and [it] refused to run out of steam," declared TJN after listening to this six-channel amplifier. "It performed to a standard well beyond its price category and more than met our" expectations. Though the top octaves sounded a little crisper than he prefers, the bass was powerful. A "must-have," he concluded. Borderline Class B. (SGHT1 No.2)

Perreaux MC-6100: $2995

This six-channel, 120Wp power amplifier is intended for the Home Theater use and offers borderline Class B sound quality, decided TJN. A tight, detailed midbass is allied to an open, airy treble and "remarkably fine rendition of image depth." Runs hot; not intended for 2 ohm loads (4 ohms in bridged mode). (SGHT1 No.1)

PS Audio 100 Delta: $1295

Main sonic characteristics of this 120Wp solid-state design are a somewhat softened bass and slightly closed-in high frequencies, thought TJN. "It's very likable," he says, "but it lacks a bit of definition, however, with its "clear, naturally rich immediacy." Good value for money. (Vol.15 No.9, SGHT1 No.1)

PSE Studio IV: $995

Physically compact amplifier offering a measured 113Wpc, but TJN claims that there's nothing "small" about the Studio IV's sound, noting its wide, deep soundstage, crisp transients, and natural inner definition. A cool sonic character and a cleanliness in "those taut, glancing" passages were его only cavils; he finds the PSE rewarding in virtually every respect. Not easy to find, but worth the search, he concludes. (Vol.13 No.1, Vol.18 Nos.8 & 8)

Rotel RB-980BX: $660

Excellent value for money, this modestly priced 120Wpc amp was designed in England but is made in the Far East. Kind to difficult loads, said MC. TJN noted a slight grain or crispness to the highs, some midbass leanness, and a somewhat soft low end, but these were offset by a lively overall presentation and an excellent sense of soundstage depth. (Vol.17 No.11, SGHT1 No.3)

Rotel RB-985: $1000

RD found this five-channel, 100Wp amplifier's sense of power and dynamics laudable, as he did its resolution. A slight loss of transparency and soundstage depth compared to the very finest, but praiseworthy at the price point. "I don't think you could do better... at $1000," he resolved. (SGHT2 No.1)

C

(Kind of Amplifiers)

AMC CVT-3030: $985

"Attempts to do for tubes what the venerable NAD 2030 did for solid-state," said JE of this 30Wpc amplifier with MOSFET preamp circuits and a modular tube output stage. With sonic errors mainly of omission, the '3030 largely achieves that goal, only really falling short in its shallow reproduction of soundstage depth. "A great buy at the price," summed up JE. Note that the response is not flat with the tone controls engaged and set to their center positions. (Vol.16 No.6)

Audiolab 8000A: $849

Well-made British 75Wpc amplifier with a clean, full-bodied sound, a clean midrange, and a quick, clean, and detailed transient. The Audiolab sounds perhaps a bit too clean for its own good; CG preferred the more vivid presentations of the Arcus DIA-100 and the Arcam Delta 290. Still, "no major shortcomings," he concluded. JA feels the Audiolab to be an amp for all reasons—"it will excel for no one to whom you recommend it." (Vol.9 No.1, Vol.12 No.9, Vol.17 No.7)

Creek 4240 Special Edition: $795

"I can't think of a single high-end electronic component available today that provides more value for money than the Creek 4240SE," concluded BJH over this 50Wpc design. "Creek ... have not only the right to demand that a person sit down, listen, and pay attention. Rise and seek out Creek for this mom!" (Vol.17 No.7; Vol.18 No.12, Special Edition.)

Jolida SJ 502A: $995

"One fine little amplifier," affirmed LB. He found this 60Wpc integrated, line-level—only tube amp quiet, tight, and tuneful—albeit a little polite. JA was impressed with the amplifier's test performance, finding it noteworthy considering a) it's a tube amp, and b) it costs so little. (Vol.19 No.3)

NAD 304: $379

The bass may lack a little slam, but "the spirit of the '70s is still alive," says CJG, who recommends the inexpensive 35Wpc NAD as one of his favorite components! "Every civilian who's geared toward the 304 instead of a cheap receiver is a planted seedling for the High End," he cries. An excellent MM phono stage. (Vol.17 No.4)

D

Editor's Note: There are currently no Class D amplifiers listed.

K

Aragon 8008, Mesa Boogie Baron, Muse Model 300, Krell KS-2, YBA 1 Alpha HC, Jeff Rowland Design Group Model 6, Ayre Acoustics V-3, Chord SPM-1200, Bel 1000 MKII, Audio Note Mehi, Ensemble Corifio, Mark Levinson No.332 and No.333, Audio Research VTA100SE, McCormack Micro Power Drive, Bryston 78-ST, Bryston 3B-ST, Conrad-Johnson MV55.

Deletions

Exposure XV Super, Fourier Sans Pareil OTL Mk.II monoblock, Meridian 605 monoblock, and Valve Tube Logic MB 225 monoblock not auditioned in too long a time; Krell KS-3005, KSA-2005, KSA-1005, KSA-505, Aragon 4004 MKII, and Acurus DIA 100 "Direct-Input Amplifier" all replaced by new models.

LOUDSPEAKER SYSTEMS

Editor's Note: Class A "Loudspeakers" are sufficiently idiosyncratic and differ enough from one another that prospective customers should read descriptions of the sound. I have therefore just listed every system or combination that at least one of Stereophile's reviewers feels, as a result of his experience, to approach the current state of the art in loudspeaker design. (Note that, to be eligible for inclusion in Class A, the system must be full-range—i.e., feature bass extension to 20Hz. They must also be capable of reaching realistic sound-pressure levels without any feeling of strain.)

For those unconcerned about the last few hertz of low-bass extension, we have created "Class B (Restricted Extreme LF)" for those speakers that are actually state-of-the-art in every other way. Candidates for inclusion in this class must reach down to at least 40Hz, below the lowest notes of the four-string double-bass and bass guitar.

In addition, such has been the recent progress in loudspeaker design at a reasonably affordable level that we have an extra class: E, for "Entry-Level."
a new era.

a new journey.

a new loudspeaker system...

is the Evolution from Nova;
a new reference standard for loudspeakers.

Evolution: $22,000 pair
Expensive two-way minimonitor with outboard crossover uses silver throughput and successfully pulls off the trick of persuading its listeners that it’s much bigger than it really is—at least at moderate Spls. Useful bass exists down to 32Hz, with a delightful control of weight and articulation. The uncolored presentation is astonishingly transparent, soundstaging is superbly palpable, and tonal balance is a little on the polite side, but the Silver Signature is, overall, the most musical-sounding design to come from B&W that JA has heard. (Vol.17 No.6)

Dunlavy Audio Labs SC-IV: $5495/pair in American Oak (black or golden) $6495/pair in Dalwood rose or Dalwood cherry

This is a fabulous speaker . . . but misses full Class A ranking by a handful of hertz,” says RD of this large, three-way, time-coherent design. The soundstaging is precisely defined; coloration is non-existent; the sensitivity is high; the impedance is a true 4 ohms; dynamics (both macro- and micro-) are superb; RD bought the review pair (Vol.17 No.4, Vol.18 No.3)

Infinity IRS Epsilon: $14,000/pair inc. servo control unit

Missing full-range Class A by a whisker, this elegant Cary Audio Design combines monopole planar drivers with a servo-controlled woofer. (Needs to be driven by two high-power stereo amplifiers.) Absolutely stunning bass, enthused TJN, “combining tightness and extension in an extremely rare manner is contrasted with an extremely neutral midband balance and grain-free high frequencies. Top octave a little subdued, but overall “an E-ticket ride,” concluded TJN. (Vol.18 No.1)

MACH Acoustics DM-10 Signature: $17,995/pair

Superb driver integration combined with an exceptionally inert cabinet makes for remarkable clarity and resolution. This, together with a knack for revealing music’s rhythmic nuances, empowers the MACH 1 to fly at the speed of sound as few dynamic speakers can. Reproduction of the upper registers is distinguished by the use of the Acouston ceramic tweeter, an unusually sweet-sounding tweeter that earned high praise from DO. Optional spiked, non-resonant platforms add $2520/pair. Reportedly, this $12,000 and up, DM-10 ($10,995, reviewed in Vol.18 No.6) is not recommended. (Vol.17 No.1; see also Martin Colloms’ comments in “Letters,” Vol.17 No.4.)

Magnepan Magnaplanar MG-20: $9200/pair

The best speaker yet to come from JIM Winne, the MG-20 impresses with its deep, out-of-D0, DO, who notes that “image outlines were remarkably lifelike within a spacious soundstage.” The “tonal center of gravity” is firmly rooted in the lower mids, which get the best from orchestral music, though slightly recessed, which gives the speaker a “back-of-the-hall” perspective. Needs to be biamped with an electronic crossover to get the best it is capable of, but optional XO-20 passive crossovers ($695/pair) are available for those who want to use a single stereo amplifier. (Vol.18 No.2)

Sonus Faber Extermin close to $9990/pair (stands necessary)

“I admire the commitment, dedication, and craftsmanship that have gone into this effortlessly musical transistorizer,” says MC of this well-constructed two-way monitor. “Always musical,” says K.K. LG agrees with both writers, saying that “The Extremis has it all: speed, transparency, imaging accuracy, and midrange richness.” Unusually, the crossover does not use capacitors, and tuning of the rear-panel ABR is adjustable to optimize the low frequencies for the owner’s room. Matching stands cost $1100/pair, but should be regarded as essential to get the best from this gem by designer Franco Serblin. (Vol.15 No.6)

Sonus Faber Guarneri Homage: $9900/pair (stands included)

This moving-coil speaker MC has found to sound better than to the Quad ESL-63, this handmade, lim-
ted-edition Italian miniature was reputedly designed by ear. Nevertheless, its response is flat, its balance neutral, and, in MC’s words, the Guarneri is all about “purity, unmistakable sense of liveliness, scale and sense of presence of real sounds in the listening room,” and, once again, the reproduction had the ring of truth.” The standard 39” stands are a little too tall for use in small rooms; custom heights can be ordered. (Vol.17 No.7)

Thiel CST: $8999/pair

“Unusually lack of coloration,” “first-rate” transient response, and exceptionally tight, unmuddied bass had TJN concluding that the CST’s tradeoffs are few. WP concurred, lauding the speaker’s line and dancelike bass response as good enough, he claimed, to make JA do the Humpty Dumpty dance! Our initial sample revealed sub-
spec woofers, a blown tweeter, and a damaged midrange driver—presumably damaged during the review. A second pair performed perfectly. TJN offers four, the speaker “a success. Its clean, overpowering design criterion has clearly been accuracy . . . The CST is not far off the mark.” Practically a bull’s-eye,” WP affirmed. Because the speakers have a low minimum impedance, amplifier matching is critical. (Vol.18 No.10, Vol.19 No.1)

Wilson Audio Specialties WATT/Puppy System V: $16,290/system

“I’ve rarely heard a system that transported me so physically into the acoustic of the recording venue,” exclaimed WP, who was also impressed by this highly sensitive (91dB) system’s grain-free, highly detailed presentation. He also lauded its tonal neutrality and spectacular presentation of dynamics. Midbass “blump” (ST’s phrase) contributed to a sense of reserve, however. Wilson has recently announced an even more radical version to the WATT/Puppy interface, said to ameliorate that coloration. Extremely critical of ancillary equipment and room placement. (Vol.18 No.11)

B

Editor’s Note: I make no apologies for the wide variety of loudspeakers listed in the next two groups. Polling Stereophile’s reviewers resulted in a total lack of consensus, implying that all of the fol-
lowing speakers will, in the right room with the right ancillaries, give true high-end sound. Following pressure from JGH that small speakers should automatically be denied any recommendation because of their lack of LF extension, I have split Classes B and C into two sections: “Full-
Range” and “Restricted LF.” To be included in the latter class, a small speaker has to be at least as good in every other area as the full-range competition. (Note that all the full-range Class B recommenda-
tions, with the exception of the Apogee Stage, B&W 801, and Spendor S100, are floor-
standing models.)

B — Full-Range

Acarian Alon IV: $3500/pair

With a bass response that was as tight as it was deep, a ‘huge’ soundstage, and excellent dynam-
ics, the three-way Alon IV impressed the heck out of BD. Some residual upper-midrange brightness can be alleviated by careful system and room matching. A slight nasality could still be occasion-

Stereoophile, April 1996

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the Aerius, $1,995.00 U.S./pr. Oak and bi-wire options available. Call extension #100 for the location of your nearest specialty audio retailer.
Avalon Eclipse: $5900/pair

A warm balance, a flat on-axis response, astonishing midrange transparency, beautifully delineated, almost holographic soundstaging, and a relative freedom from sonograph. Relatively high levels barely hint at non-detachable crossover. This allow the music to communicate most effectively. A tendency to brightness alleviated by using appropriate amplification—the Pass Aleph 0s work a treat, says SS (who bought a pair) for the record. The Eclipses also have somewhat limited dynamics, which can lead to loudness at very high playback levels. Price refers to a Nextel finish, a non-rain-forest veneer finish adds $1700/pair. Current production has "an inexpensive tweeter revision" that AB felt to significantly improve the sound; easy to upgrade. (Vol.14 Nos. 10 & 15, Vol.15 No.8)

B&W Matrix 801 Series 3: $5500/pair (stands optional)

A complete redesign of the classical recording industry's standard monitor loudspeaker—aluminum-dome tweeter and B&W's patented "Matrix" enclosure, whereby the cabinet is effectively transformed into a solid body—has resulted in a moving-coil speaker capable of competing with the best. PALS put it, "a true musician's speaker," and that "...include excellent low-frequency definition and weight, a highly detailed midrange, and unrestrained dynamics. Best used with stands—we've had good results with the Sound Anchors and with the wooden boxes from C. J. Jeff's (Vol.13 No.10, p.45, and Vol.13 No.2, p.217, for discussions of a crossover modification that improves the sound of the original 801 Matrix.) Current version has a revised tweeter, a non-detachable head, an improved crossover layout, and has done away with the APOC protection circuitry. (Vol.10 No.9)

Energy Veritas v2.8: $6000/pair

This tall, "hi-tech"—looking three-way/four-driver design from Canada uses a dome midrange unit and has a flat midrange/treble response, impressive dynamics, and near-textbook horizontal dispersion. Borderline Class A sound and imaging are the result. However, the bass is balanced to be rather generous in all but very large rooms, found TJE. "The mids and highs are exceptionally articulate, balanced, and accurate," adds WP. The v2.8 can be tri-wired or triamped; some owners recommend reducing the midrange level by wiring a 1 ohm, 10W resistor in series with the "hot" terminal. (Vol.17 No.6; also see TJE's review of the Thiel CS7 in Vol.18 No.10)

Flatliners: $995/pair

This hybrid speaker's ribbon tweeter gives its sound a "shimmering, lush, life-like quality," notes RT, adding that the speaker gives a transparent window into the recorded performance. Careful setup is mandatory, and RT suggests that nobs amp will get the best from the Flatliners' rather laid-back balance. The cabinet has been more rigidly braced since the review. Price is for oak finish; cherry veneer adds $500/pair. (Vol.17 No.12)

Gradient Revolution: $3995/pair

On the surface, it is hard to find anything new here. He finds the Revolution, designed to be less room-dependent than ordinary speakers, "quite entertaining," although not spectacular in conventional audio-philic terms. He found their greatest strengths to be organic wholeness, solid imaging, excellent microdynamics, and a sizzling rhythmic drive. Rating provisional as review samples turned out to have a broken crossover. A Follow-Up is underway. (Vol.18 No.5)

Infinity Compositions Prelude P-FR: $3400/pair

RH calls the Compositions Prelude P-FR loudspeaker with its integral active subwoofer "a stunning musical, technical, and aesthetic achievement, finding them capable of producing "transcendental musical moments" as well as performing "impressive[ly] on movie soundtracks." But he's most chuffed by their ability to be driven to saturation "without the least hint of edge, crossover, or triode angst— calling that combination "one of the most musical-sounding systems I've heard— regardless of price." He does admonish that some will find the tonal balance too lean, wishing a little more weight and authority himself. ST, a proponent of SE triodes, concurs—adding, "they're soundstaging champs."

JPF Ruby 4: $2895/pair

Well-finished two-and-a-half-way design from Britain that uses metal-diaphragm drive-units. Excellent soundstaging; transients are aligned to tight but light low frequencies, a very clean midrange, a sweet-sounding lower treble, and fast, open, and alive highs. Can sound a little too silento, however, and dynamic range is relatively restricted. (Vol.17 No.8)

KEF Reference Series Model Four: $5200/pair—$6400/pair depending on finish

TJE felt the "hard to tame but worth the effort," advising potential purchasers to audition them with the associated equipment they intend to pair them with. The Four is delightfully conceived, with their soundstage more dynamic and a nice coherence. But, the Four is a little tamer, and according to WP a little less boisterous than the"punchy tightness," which, found fogged over the mid- and upper bass. That said, he found the speaker's balance especially conducive to the portrayal of large orchestral music—especially when paired with its "prodigious dynamic range and big, open quality." And, he added, it definitely does play deep, with plenty of impact. A JA rave. (Vol.19 Nos.4 & 7, Vol.16 No.2, original version; Vol.14 Nos.8 & 10, Mk.II; Vol.18 No.10. Special Edition.)

Martin-Logan Quest Z: $4295/pair

Martin-Logan's most successful and intensely musical hybrid to date, according to DO, blending a world-class electrostatic midrange with good, dynamic bass. Soundstaging transparency and reproduction of image size are superb. As with all hybrids, the optimization of the front port is crucial. A fairly close sitting layout. Even so, there are some residual tonal-balance deviations from neutrality. The upper bass is on the lean side of reality, while the lower treble is overly polite. Even though the mid-bass benefit from the imaging magic of tubes, this best-bass emphasis is to be had with solid-state amplification. The Z version (said to be sonically identical to the older Quest) offers a more benign impedance. (Vol.16 No.10)

Martin-Logan Aerius: $1995/pair $$$

Once again, this manufacturer offers superb integration between electrostatic panel and dynamic woofer, and very good LF extension for what is basically a small speaker. In terms of speed, truth of timbre, absence of coloration, and reasonably good imaging and soundstage focus, ST feels the panel bass is second only to Wilson Benesch, terme more highs, in absolute terms. MC points to a rather rugged on-axis response, but JA states that, within the restriction of its necessarily limited dynamic range (which will rule out its use in large rooms), the Aerius is the best speaker on the market from M-L. "It's the exceptional balance of its strengths that makes it such a satisfying component," agrees WP. Oak side panels and bi-wiring
Audio instruments that invite you to linger in that timeless, wordless, inexpressible region of music where sound and sense meet mind.
"Thief CS3.6: $4300/pair
Remarkably transparent, extraordinarily uncolored floorstanding three-way speaker, with first-order crossover and truly time-coherent perfor- mance. A thoroughly thought-through design of source imperfectness and bass on the edge of the generous side, both of which will mean extra care needs to be taken in system matching. "A terrific bargain" at its price, RH concludes: "The more I listen to them, the more I like them." Needs a muscle amplifier to cope with its very low impedance; CG found the Aragon 4004 Mk.II to drive it with aplomb, though he noted its limited loudness capability compared with the NHT 3.3. (Vol.16 No.5, Vol.17 No.1)

Thiel CS2 2: $9250/pair $$$
Smooth, civilized, "buttoned-down" sound with good soundstaging, excellent presentation of detail and dynamics, and superbly controlled and nicely extended bass. "One of the best speaker values on the market today," states JA. "Extends the Thieils as one of his long-term references, though it's fair to note the '2's reduced transparency compared with the larger '3.6.' He also points out to habitual party-throwsers that the "very limited size" of the signature version pushes forward the performance of its sibling to the threshold of Class A. Bass definition, low-level detail resolution, and low-midrange transparency are all improved—but at a price! (Vol.17 No.1 & 2)

ProAc Response 2.5: $4500/pair
"A strong vein of honesty and integrity running through this design," asserts MC. "Timbre is nicely judged, the bass, mid, and treble are well balanced and there's a limited midrange effect which is remarkably even-tempered, well-balanced...even self-effacing." Perhaps, he notes, the Regent shows a touch of reticence in dynami- c expression due to its decoupled drive-unit panel — but that could also be the cause of the speaker's low end's somewhat loosened character. (Vol.18 No.8)

Ruan Crusader II: $3300/pair
This moderate- to large-size British three-way features a superb-sounding dome midrange unit, lean, lean bass, and an overall balance that is ever so slightly off the ideal. Treble is presented without the slightest trace of fatigue, and a powerful, generous bass. The treble is less prominent when the speaker is used with the grilles on, the sound being an inch or two. Too, the speaker offers a great deal of flexibility. (Vol.14 Nos.2 & 10; see also PW's "Industry Update" in Vol.14 No.4)

Snell Type C V: $2599/pair
A full midrange and good LF extension are combined with a clean, transparent, uncolored midrange and a smooth, detailed treble. Overall balance is a little forward in the midrange. This thin, floorstanding, three-way five-driver is one of the best speakers yet to come from Snell designer Kevin Veoec. (Vol.17 Nos.6 & 4)

Wilson Audio Specialties WITT: $8888/pair
"Wilson's most completely balanced design to date," raves MC. Tjin found them immediate- ly appealing, dynamic, and neutral, yet sweetly detailed, but ultimately not quite Class A, owing to his desire for a more authoritative low end. "Could be marginally improved by a really good subwoofer, assuming a good blend could be achieved. Needed a bit of bass magic, but a slight lack of top-octave air and somewhat restricted image depth. Needs to be driven hard, but then really comes alive. Superb value for money." (Vol.17 No.11)

Meret Audio Ay: $4700/pair
"Presents the well-controlled, smooth, unified, slightly distant sound so prized by many audiophiles." Offers a unique flow involving sound. Coherent and detailed, with seamless integration of the drivers, the Ay shines, he concedes, in the presentation of voices, smallish-handsized ensembles, and orchestral music that makes no unclarity demands. Construction and design are both impressive, he notes—to which JA adds amen. A rosewood veneer adds $200/pair. (Vol.18 No.7)

Metaphor 2: $5950/pair
"There's a lot of work in the metaphor," quips WP, who greatly admires these speakers. "Their strength is precisely that they never call attention to themselves, always serving the music first," JA, puzzled by his measured performance, suggests that, as good as the Metaphor 2 sounds, knocking on the door of Class A even, there might be an even better loudspeaker hiding within. (Vol.18 No.7; see WP's Follow-Up in this issue.)

Mirage M-1si: $6000/pair
Large bipolar design from Canada with a smooth yet detailed sound. A large, spacious soundstage — both in width and depth — a clean, low-coloration midrange, and silky, detailed highs, according to TJN. Bass is deep and extended, though it leans toward warmth; it's at its best with solid-state amplifiers having tight low-frequency control, and soundstage seems to expand in Home Theaters applications. (Vol.16 Nos.6 & 10)

Mirage M-3si: $3300/pair $$$
"An unqualified success," said GL of this unusual floorstanding bipolar design, "...which, in the right setup, can recreate a musical experience with all the richness, finesse, power, and majesty [of] a full-range speaker." Flatter response to be found on the woofer axis (32" from the ground), though the full-bodied bass might be too much in some systems or rooms. (Vol.15 No.11)

Monitor Audio Studio 50: $7995/pair
MC was impressed by this "expensive but undeniably classy speaker." Although its overall presentation was a tad reticent, he found the Studio 50 fine-focused, transparent, and possessed of good stereo imaging. MC's pair had the tweeter wired outward, whereas the pair measured in Santa Fe did not — a QA problem we also experienced with Monitor's Studio 2 (Vol.18 No.2). Once that had been fixed, MC found the Studio 50 a "good speaker, one that can be very enjoyable in the right environment." A rosewood veneer adds $900/pair, handrubbed lacquer finish adds $2705/pair. (Vol.19 No.3)

NHT 3.3: $4300/pair
Unusual four-way dynamic speaker, deep but narrow, goes against the front wall to optimally load the woofer but still get a minimum of image interference. TJN was impressed with the NHT's sound, commenting on its extended, powerful, well-defined bas, the sweet, delicate high frequencies, and well-focused soundstaging. He did find the last less expansive than with some other speakers. However, the imaging restricted to the space between the speakers. "Id'd choose the 3.3 over any of the speakers in Class A," says CG, however, enthusing over the NHT's neutrality and ability to play very loud without strain, and adding that he finds himself "without a single area of performance [he's] heard better by any other speaker." (Vol.16 No.12, Vol.17 No.3)

Nestorovic Type SAS Mk.IV: $4500/pair 🅿️
Nestorovic Type SAS Mk.IV Signature: $7000/pair
A four-way dynamic loudspeaker that features a patented bass alignment when driven a second woofer also behaves somewhat as an auxiliary bass radiator. 1/0 felt that the Nestorovic's midband had a velvety, non-resonant texture, especially on female voice, and that its highs were free from sizzle and rizz, though he did find that soundstage depth did not develop as fully as he'd expected. JA found the bass "unimpressive," but the treble, which might be a factor here, though it does lead to a synergistic balance with tube amplification rather than solid-state. Nestorovic's own NA-1 monoblocks gave liquid-sounding mids and a bold, sweeping soundstage, reported 1/0, which summed up his feelings thusly: "In terms of total balance, LF extension, and dynamic scale, this speaker allows one to fully explore orchestral music without trepidation, congestion, or any illusory sense of reticence. This generous signature version pushes forward the performance of its sibling to the threshold of Class A. Bass definition, low-level detail resolution, and lower-midrange transparency are all improved—but at a price! (Vol.9 No.5; Mk.IV, Vol.14 Nos.9 & 10; Signature, Vol.17 No.5)

Paragon Regent: $3495/pair
"There's a strong vein of honesty and integrity running through this design," asserts MC. "Timbre is nicely judged, the bass, mid, and treble are well balanced and there's a limited midrange effect which is remarkably even-tempered, well-balanced...even self-effacing." Perhaps, he notes, the Regent shows a touch of reticence in dynamic expression due to its decoupled drive-unit panel — but that could also be the cause of the speaker's low end's somewhat loosened character. (Vol.18 No.8)

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This moderate-sized British three-way features a superb-sounding dome midrange unit, lean, lean bass, and an overall balance that is ever so slightly off the ideal. Treble is presented without the slightest trace of fatigue, and a powerful, generous bass. The treble is less prominent when the speaker is used with the grilles on, the sound being an inch or two. Too, the speaker offers a great deal of flexibility. (Vol.14 Nos.2 & 10; see also PW's "Industry Update" in Vol.14 No.4)

Snell Type B minor: $3699/pair
A full midrange and good LF extension are combined with a clean, transparent, uncolored midrange and a smooth, detailed treble. Overall balance is a little forward in the midrange. This thin, floorstanding, three-way five-driver is one of the best speakers yet to come from Snell designer Kevin Veoec. (Vol.17 Nos.6 & 4)

Snell Type C V: $2599/pair
One of the most neutral, naturally balanced midranges around, coupled with extended, well-controlled bass. Though the sound is not as defined here as with some other speakers, a lack of top-octave air and somewhat restricted image depth. Needs to be driven hard, but then really comes alive. Superb value for money.
Jacques MAHUL founded JMlab/FOCAL in 1979 with one goal in mind: to continually advance the musical "state of the art" with world-class loudspeakers. Based on the respect he's earned from the most prestigious designers in the industry, he has succeeded. But Jacques and the rest of JMlab/FOCAL's design team isn't easily satisfied.

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Oscar Wilde

"GRANDE UTOPIA" the fulfilment of progress

Jacques Mahul
WTTs with a WATT/Puppy System V as the center speaker gave the best Home Theater sound he had heard at TJK's. (Vol.19 No.1)

B — Restricted LF

Acoustic Energy AE2 Signature: $5895/pair ($ stands necessary)

This gorgeously finished minimonitor impressed JA as "both a superb-sounding loudspeaker and a superb-looking piece of furniture." He was seduced by its very smooth high frequencies, absence of HF grain, and lean yet extended bass response. Moreover, he enthused, there was one area "where the Acoustic Energy beats out every monitor we've reviewed." The AE2 is a bipole, and of course, and even a degree of midbass MIA, but the overall sound is "open and full ... sporting a rare degree of uncolored coherence," he noted, with a realistic body to its imaging. Benefits from its "good, rigid, and compact design that the Bangers. The baby Acro "does right by the music," WP concluded. (Vol.17 No.9)

Thiel CS1.5: $2190/pair $$$

"Among the most exciting speakers I've encountered in years!" exclaimed the occasionally occurring JA. The Thiel is "after all truth of timbre, resolution, superb soundstaging ... midrange magic and clarity ... the CS1.5 may be just what you want." MK concurred, noting that the 1.5 reveals "Detail, detail, detail," allowing him to get "all the way into the recording. Noting a "hashy" quality in the 7kHz region, he observed that it nonetheless did not inhibit his enjoyment of the speaker. Dynamics are naturally limited; while the second-smallest Thiel goes considerably where you might expect, it's still a "wonderfully sane" speaker "that's about quality, not quantity," in the words of ST. "A lot of speaker at an affordable price," opined JA. (Vol.17 No.8, Vol.18 No.1)

Totem Acoustic Model 1: $1595/pair $$$ ($ stands necessary)

 Astonishing LF response for such a small speaker, found LG, with smooth, sweet highs, excellent dynamics, and palpable, well-focused imaging, particularly in the deep plane. Some midrange prominence, however, GA cautions. Suggested stands are the Tangent Model R4 ($720/pair), HJ ($265–$295/pair), or HS ($165–$185/pair). (Vol.16 No.4)

C — Full-Range

Acadian Alon 1: $1950/pair

Our initial review samples had a severely flawed midrange that precluded recommendation. Redisigned second samples sounded much more neutral, allowing this floorstanding three-way's superb soundstaging, well-controlled and weighty, but exaggerated bass, and lack of boxy colorations to be appreciated. Rosewood finish adds $200/pair. (Vol.16 No.8)

Audio Artistry Mozart: $7295/pair

A speaker possessing a classic tonal balance and excellent dynamics, the Mozart was particularly adept at preserving the rhythmic drive and pacing of live music, said DO. JGH was impressed by the Mozart's lively, vivid presentation and big bass, but both aspects of the speaker's balance tended to outrage their welcome, he found. DO also felt the upper registers to be lively and a bit metallic. Investigate a tube amp, he says; works well with the Cary 805. Review sample had some resonant problems in the lower mids, said to have been fixed in production. (Vol.17 Nos.1 & 8)

Joseph Audio RM-20ti: $2099/pair

A wide soundstage, good bass extension, and a clean, transparent sound were offset by a rather harsh midrange. See our preliminary review. A very low ultrasonic impendence characteristic has been fixed in current production. JE finds the current iteration much more musical than his earlier sample — due chiefly to a smoother top end that renders vocals less sibilant and cymbals less splatty, while improving the integration of the two drivers. This reduces airiness and sparkle, but it's a tradeoff JE gladly makes for a more naturally musical presentation. As is his wont, he suggests removing the protective covers from the tweeters — which, he claims, improves the sounds of vocals and strings. (Vol.17 No.8, Vol.18 No.6)

Linn Kelidih LS300: $1495/pair ($ stands necessary)

Borderline Class B, according to RH, who enjoyed this Scottish speaker's tuneful, "fast" bass, smooth, uncolored midrange, generally clean treble, and — with a compromise between bass extension and involving overall presentation. Treble can be a bit sibilant, however, and the lower midrange lacks ultimate transparency. One of the few high-end speakers that works best near the wall behind it. RH says he would choose the Kelidih over all other loudspeakers currently in Class C. Polymer/granite bases — essential — add $225/pair. Performance can be taken even further by biasing and bypassing the internal crossover. (Vol.16 No.10)

Mission 77: $1500/pair $$$

Floorstanding dynamic dipole design — not a bipole like the larger Mirages — that throws a big, deep soundstage with a convincing sense of image size, but is rather generous in the midbass. The clean, grain-free treble, however, is competitive with the best, states TJK for the record. (Vol.18 No.2, SGHT No.1)

Mission Cyrus 753: $1800/pair

Unusual floorstanding design uses four small woofers — two reflex-loaded, two in sealed enclosures — to give good balance between bass extension and definition when speaker is used, as intended, near the wall behind it. Intricately balanced is on the lively, incisive side; but with the speakers not tuned-in to the listening seat, the clean highs are in good balance with the uncolored, very transparent midrange. A JA favorite. Price is for black finish; rosewood adds $200/pair. (Vol.16 No.9)

NHT SuperZero/SW2 2P active subwoofer: $940/system ($ stands necessary)

The active SW2 2P woofer (in 6dB point is $35Hz) turns the basic SuperZero (see later) into an impressive, almost-full-range speaker system, preserving the tiny speaker's virtues. CG got the best sound using Y-adaptors and simple, passive first-order filters in the satellite amplifier signal path. JA found the SW2 to be a little one-note overall, but not excessively so, provided care was taken in setup and room positioning. Excellent value. (Vol.17 No.1)

PSB Stratus Silver: $1500/pair $$$

A detailed and clean, slightly midrange-forward presentation, with a slightly bright and somewhat bassy touch of crispness in the highs, was how TJK summed up the sound of this elegant Canadian two-way floorstanding speaker. Borderline Class B, adds PWM, feeling that the Silver is not quite as uncolored in the midrange as the more expensive Stratus Gold. (Vol.17 No.7)

Ruark Templar: $1100/pair $$$

"These lil' dooggers have no business sounding as enjoyable as they do" exclaimed WP. While the infinite-baffle design gives somewhat limited bass, with tight, punchy definition, he declared the soundstage to be smallish, although exceedingly well-defined. In terms of pace and drive, however, he felt them to set a high standard. (Vol.18 No.12)

Snell Type D: $1799/pair $$$

A very transparent, open, and unsullied presentation, said TJK, adding that this three-way tower speaker's low-frequency performance was "amazing." An astonishing lack of coloration at the price, confirms PWM, adding that the Type D has an impressive ability to remain open and transparent with large-scale orchestral recordings. Borderline Class B, though an occasional edge in the lower treble will mean careful system matching. (Vol.17 No.7)

Thiel CS.5: $1450/pair

LJ likened the baby Thiel to a good flunker:
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"they go deep and wide" in their soundstage. Detailed but not edgy, and capable of producing honest bass—just not the lowest octaves. Not designed to play "REALLY LOUD!" El Bee reports, but sufficient for most listeners. His final assessment: "I think they're too long and it's not a lot of sound for the money." Price is for walnut or black finishes; optional finishes extra. (Vol.18 No.10)

Vandersteen 2Ce: $1295/pair $$$ (stands optional)
The review copy of Richard Vandersteen's classic three-way design has a larger cabinet and a revised drive-unit. The intrinsic balance is a little on the warm side, with a forward midrange and rather limited transparency and image focus. However, with the right amplifier and speakers that perform better than the 2Ce in one or more areas, there is not a speaker in its price range that does so little wrong across the board. TJJN wrote that it spreads its compromises so that there is no particular area of weakness: DO was impressed by the 2Ce's tonal balance and sense of pacing; JA noted that it offers more extended lows than its competition. A great value for the dollar. The Vandersteen bases for the 2Ce cost $125/pair. (Vol.16 Nos.4 & 9)

James W. Bowman's Monitor 202 Leadline: $2500/pair (stands necessary)
Well-made, large, Australian two-ways with, as the name suggests, lead used to add mass to and damp the enclosure walls. Good low-end weight, definition, and dynamics are married to good imaging and a very clean upper treble. The lower midrange sounded thickened, however, while a tendency for the low treble to sound hard restricted overall dynamic range, thought JA. Matching stands cost $200/pair. (Vol.17 No.8)

C—Restricted LF

Acarian Alon Petite: $995/pair $$$ (stands necessary)
"Let's just dub them 'first among equals,'" suggests WP of this affordable minimonitor. Care must be taken not to play them too loud or attempt to take them too low, but other than those caveats, he found them to "perform way out of their price class." Refined performers and imaging champs, he extols. RJR, also a fan, claimed that, paired with a quality budget integrated amp such as the Creek 4240SE, the Petite sets a new standard for an under-$2k system. Must be tilted back for best performance. Rosewood veneer adds $200/pair. (Vol.19 No.1)

Acoustic Energy AE1: $1995/pair ★★ (stands necessary)
Tiny reflex box with metal-dome tweeter and metal-cone woofer. Redefines the art of miniature speaker design, according to JA, due to its relatively high dynamic range, electrostatic-quality treble, and hear-through, if somewhat forward-balanced, midrange. Bass is perhaps the weak point, with a rather slow-sounding character that keyboard fans may not approve of, according to AE1 fan JA. Now supplied ready for bi-wiring with gold-plated binding posts, and distributed by Northstar Leading The Way. Price is for satin-black finish (other finishes available on request); matching stands cost $1095/pair. (Vol.11 No.9, Vol.15 No.7, see also Vol.15 No.9, p.162)

Audio Physic Step: $1795/pair (stands necessary)
Well-made reflex-loaded minimonitor from Germany that, when listened to well below the tweeter axis, will get the best from high-quality electronics. As long as it's not played too loud. Soundstaging is excellent—well-defined and deep. Useful bass extends down to about 60Hz. Matching Sound Anchors stands—essential to tilt the speaker back at the right angle—cost $250/pair. (Vol.17 No.10)

Celestion SL600S: $2099/pair ★★ (stands necessary)
Though lacking the bottom octave-and-a-half of bass extension, and possessing slightly depressed mid- and extreme-treble ranges that make system optimization necessary, the SL600S combines lower-midrange transparency and holographic imaging (areas where it badly beats most of the moving-coil competition) with a musical if dark-sounding balance unique for a box speaker. Worth using with high-end electronics. Current Si version has revised crossover; the SL600S combines lower-midrange transparency and holographic imaging (areas where it badly beats most of the moving-coil competition) with a musical if dark-sounding balance unique for a box speaker. Worth using with high-end electronics. Current Si version has revised crossover; the SL600S combines lower-midrange transparency and holographic imaging (areas where it badly beats most of the moving-coil competition) with a musical if dark-sounding balance unique for a box speaker. Worth using with high-end electronics. Current Si version has revised crossover; the SL600S combines lower-midrange transparency and holographic imaging (areas where it badly beats most of the moving-coil competition) with a musical if dark-sounding balance unique for a box speaker. Worth using with high-end electronics. Current Si version has revised crossover; the SL600S combines lower-midrange transparency and holographic imaging (areas where it badly beats most of the moving-coil competition) with a musical if dark-sounding balance unique for a box speaker. Worth using with high-end electronics. Current Si version has revised crossover; the SL600S combines lower-midrange transparency and holographic imaging (areas where it badly beats most of the moving-coil competition) with a musical if dark-sounding balance unique for a box speaker. Worth using with high-end electronics.
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Stephen Yan
Audio Video Singapore

"Focus, transparency, clarity and speed were better, as was the sense of space and pace."


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dynamic response are pluses, but JA found little image depth, and the tonal balance affected pace. (Vol.18 No.9)

Epos ES11: $995/pair $$$ (stands necessary)
Borderline Class C sound, said JA, if it weren't for a rather congested, lower midrange and restricted dynamics. But above that region, this sophisticated little English two-way from Robin Marshall gets everything right: instrumental textures and timbres, imaging and soundstaging, a seamless blend of music, a transparent and taut midrange, and grain-free highs. Matching stands cost $250/pair. Highly recommended. (Vol.14 Nos.7 & 10)

FHabarth LS3/5a: $1250/pair $ KEF LS5/5a: $1450/pair in teak (Santos Rosewood adds $200/pair) $ Spendor LS3/5a: $895/pair (stands necessary)
A major 1988 revision of its crossover was meant not so much to "improve" this venerable BIC design (first seen and heard in 1975) as to bring production back up to the circa 1980 target. Still is somewhat compromised in overall dynamic, HF smoothness, and clarity when compared with Class B and C micros such as the Acoustic Energy AE1, Gemini 1M-5200, Harbeth HL-50, and Celestion SL600S and SL700, and having a distinctlyubby midrange, the 1993 version of the LS3/5a still suffers from the least coherent midrange, and bands around, throws a deep, beautifully defined soundstage, and has a slightly sweeter top end, with less nasality than it used to have. Works well on classical orchestral or operate music. The sound, however, is sometimes not as musically involving as it could, or should be. (At low levels, the LS3/5a may lose its competition to the stand-alone SuperZero, whether you select the LS3/5a or the LS5/5a.) (Vol.15 No.1, p.89)pared with the original's rubber surrounds. Originally manufactured by Rogers, who discontinued it at the beginning of 1993, the LS3/5a is still manufactured by Spendor, Harbeth, and now KEF. The Spendor has one pair of input terminals; the Harbeth is bi-wirable with four gold-plated Michell connectors—see "Industry Update," Vol.15 No.2 and is available in "exotic" versions for an additional $250. (Vol.13 No.12, Vol.4 No.13, Vol.7 No.4, Vol.12 Nos.2 & 3, Vol.14 No.10, Vol.16 No.11)

NHT SuperZero: $240/pair $$$ (stands necessary)
Not just limited bass, but low frequencies at all, leading to a thin balance that fails completely on orchestral music. SS, and play a lot of large-scale classical music, you'll miss the point of this tiny speaker. With the right kind of music, "the best-sounding speaker under $1000" se CG, who was impressed by the resolution of detail, accurate midrange balance, and incredibly spacious soundstaging. The tingle is a touch exaggerated, however, which is further emphasized by the speaker's lack of bass. (Vol.17 Nos.1 & 9)

Phase Technology PC80 Mk.II Compact Monitor: $699/pair (stands necessary)
El IE and four of these affordable minimonitors refused and neutral when played within their limits. He also made note of their powerful but not particularly well-defined bass and impressive lateral spread. However, he cautioned, "I didn't scour to get much depth." The upper mids had a slight emphasis, which might mean care needs to be taken choosing matching components. (Vol.18 No.12) ProAc Studio 100: $1400/pair (stands necessary)
A slight excess of HF energy didn't prevent CG from liking these descendents of ProAc's successful Super Silver Nano, due to the low frequencies when they were driven by tube amps. Bass is a tad woolly but dynamics are excellent. Requires careful system matching, however. (Vol.17 No.10)

Sonus Faber Minuetto: $1500/pair (stands necessary)
Italian minimonitor with smooth, polite balance, precise imaging, a lively, agile bass, and good articulation. Very sensitive to vertical listening axis. Requires careful system matching. Matching stands cost $395/pair. (Vol.17 No.10)

Canon S-35: $399/pair (stands necessary)
"Check this cute Canon out," alters JA, finding it handsome and capable of greatly enhancing a multimedia system—if ultimately too colored when listening to the classical, acoustic music he prefers. Restricted output—crank 'em above 82dB and expect extra mud, he warns, but cymbals have an airy sound, and LF performance is a pleasant surprise at this price point. Designed to be somewhat omnidirectional, the S-35s do expand the sweet spot — although at the cost of restricting image depth and diffusing the center image. (Vol.18 No.10)

Celestion MP1: $299/pair (stands necessary)
Although he finds the MP-1's overall presentation lightweight, with little midbass and no deep bass, JE nonetheless admires its compelling rhythm, pace, and unfailing spaciousness. Ultimately, though, he feels that it's not quite right good thing. Not suitable for high-end music-only systems, he concludes, but his high-end and high sensitivity make it a natural addition for multimedia computing or Home Theater use. Celestion SuperZero Mk.II crossover ($499, see JE's review in Vol.18 No.10)-usefully expands the bass, (Vol.18 No.5 & 10; SGHT2 No.2)

Paradigm Atom: $169/pair $$$ (stands necessary)
A tiny speaker that gets the midrange right, according to SS, with reasonable dynamic contrast and some upper-bass bloom but polite highs. Matching C-70 stands cost $89/pair. (Vol.17 No.9)

Paradigm Titan: $209/pair $$$ (stands necessary)
A little larger than the Atom, the Titan has a similar politely bass, but with a slight nasality apparent. Available in a shielded version for Home Theater use. (SGHT1 No.1)

PSB 500: $499/pair (stands necessary) $800/pair)
Balance is warm and full rather than tight and lean, but impressive bass weight doesn't turn to boominess. Refined highs for an inexpensive speaker. The two-way 500 achieves "that rare balance of ease and detail," according to TJN, with moderate coloration and congestion setting in only at high levels. (An "attractive mix with no glaring weakness," Matching SP5 stands cost $795/pair. (Vol.16 No.7)

PSB Alpha: $219/pair $$$ (stands necessary)
"An outstanding audio bargain," proclaimed JE of this little two-way. Designed to be used close to the rear wall, the Alpha plays surprisingly loudly without strain, though toe-in is best avoided to minimize hardness. Optimum with electronics that sound soft. Imaging somewhat vague compared with the Crisis Davao Model 1s. Upper bass a little exaggerated and a bit "hoozy" compared with the NHT SuperZero, but gets the midrange right. (Vol.15 No.7, Vol.17 No.1, SGHT1 No.1)

RadioShack Optimus Pro LX5: $300/pair (stands necessary)
Based on a design by Linenut (who assembled the tweeter subassemblies), the LX-5 has become a cyberspace favorite, with many threads spun concerning modifications. Low frequencies boomy and undefined, but the high frequencies when played at its natural volume level. The LX-5 is a bit too much bass, despite the tweeter's extended bass response. (Vol.18 No.3, p.65-67) We recommend that those trying to subwoofer on the cheap instead look at the possibility of acquiring more-expensive full-range loudspeakers.

A Bag End S18E/ELF 1: $2400 for ELF 1 crossover, $776-$1976 for S18E, depending on finish These relatively small subwoofers have deeper extension than any other LGs has experienced in his listening room. Some claim signal below 60Hz is non-directional, but LG sees two S18Es "more than doubled the impact, power, and control," offering pitch definition, "a rockier tack" beyond expectations. The ELF-1 crossover has stereo subwoofer outputs, adjustable crossover points, and customizable limiter functions for both subwoofer and satellite amplifiers. You need a light touch with the gain settings, he cautions, or you risk overpowering your main speakers. (Vol.18 No.5)

Muse Model 18 active subwoofer: $3450 ($3400 incl. crossover and amplifier)
Slot-loaded active mono subwoofer extending down to 18Hz with which RR, LG, and CG have obtained great sound (successfully integrating with various Home Theater, and several models, Quad USA Monitors, and Spica Angelus, respectively). "A complete lack of plodding slowness," said RR of the Model 18's ability to present recorded kickdrum with its character intact. RH also noted that it offers a "dynamically agile" bass in a subwoofer. Part of the reason...
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Wing Cheung, AudioTechnique Magazine

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for the Model 18’s quality is that it’s not intended to extend very high in frequency, thus minimizing its potential for introducing midrange anomalies. In addition, it can be customized for the specific satellites with which it is to be used, to give a scintillating match and "air." The Model 18’s crossover for a specific loudspeaker costs $35, and seems to have very little editorial effect on the sound of the satellites (other than the high-pass function, of course). Price is for oak finish; walnut or cherry finish adds $250. Balanced inputs cost $500. (Vol.14 No.7, 8, 10; Vol.16 Nos.3 & 5.)

Snell SUB 1800: $2499 each

Huge, THX-specified, passive subwoofer using an 18" driver unit that beats out all comers for its combination of bass extension and dynamic range. (Vol.18 No.2, Vol.19 No.3.)

Byrston 10B electronic crossover: $1195

Slight sacrifice in image depth and an increase in electronic "edginess" keep this otherwise excellent solid-state crossover from attaining Class A status. Very versatile regarding slopes and crossover frequencies, with adjustable inputs and outputs add $200. (Vol.17 No.5.)

Entec 12-20 active subwoofer: $3247 (inc. crossover and amplifier)

Though it has a lower dynamic range than the Mezzie, keeping it from Class A, the Entec never-the-less is very clean and well-controlled. Its interface is extremely versatile, and includes a useful notch filter to tame the most annoying low-frequency room modes. (Vol.16 No.5.)

Graduat SW-63: $3000/system (inc. crossover)

Stereo dipole moving-coil subwoofer system from Finland, distributed by May Audio Marketing and intended to be used with the Quad USA Monitors. Adds useful increase in dynamic range and midbass power handling: "Within the 40–100Hz range I had never heard a Quad system sound so clean, well-defined, and fast," said LG. Though he found that the SW-63 lacked the bottom octave of ultimate LF extension and was prone to subsonic overload when driven hard in large rooms, he felt that the balance of the system was of a "must-listen" for any Quad owner. Separate stereo amplifier required. Balanced inputs/outputs add $105. (Vol.14 No.10, Vol.16 No.3.)

Velodyne ULD-18 active subwoofer: $2799 (inc. crossover, amplifier, & servo electronics)

Lightweight, well-damped, servo-controlled subwoofer system to offer superb bass performance, extending his Quad USA Monitor’s low frequencies to 20Hz even at high levels, and adding a considerable degree of dynamic contrast. LG found the ULD-18 to work well with B&W 805s as well; he and PWM would rate it Class A. Others on the magazine’s staff disagree, feeling the Velodyne belongs in Class B due to its overall lack of absolute definition and a propensity for adding midrange coloration (this perhaps due to the crossover electronics). Its cost is $300 to modify a ULD-18 to the THX specification, though some feel the THX specification trims off bass extension for dynamic range. The THX version costs $2999. (Vol.12 No.10, Vol.14 No.10, Vol.16 No.3.)

C

Audio Concepts (ACI) Titan active subwoofer: $729 each

Does not extend as low as the Velodyne 2W, TJN observed, but the very clean bass makes up for it. Class C, he reckons. (SGHT No.1.2)

Gradient SW-57 woofer: $2395 (inc. crossover)

Like its sibling for the ESL-63, the ‘57 is a stereo dipole moving-coil subwoofer system, this time intended for use with the original Quad electro-static. Adds small-signal extension to 25Hz, but has limited dynamic range (though no more so than the electrostat, of course), so is not recommended to headbangers. SS found that, though the Quad sits atop the subwoofer, the listener’s axis is still a bit low. Balanced inputs/outputs add $105. Distributed by May Audio Marketing. (Vol.17 No.1.)

Hsu Research HRSW12 active subwoofer: $850

This powered subwoofer strikes RJD as competitive with units costing up to twice as much. He finds no thick bass overspill—the bane of many subwoofers—but neither does the Hsu match the solid crispness of the Velodyne F-1500H. Energize the room then is possible, even taking a real toll at reproducing the 16Hz fundamental in the second movement of the Saint-Saens “Organ” Symphony. “An outstanding bargain.” Price is with Zolatone top; the ‘12 costs $925 with an oak or walnut top. (SGHT No.1.2)

M&K MX-200 active subwoofer: $1495

RJD found the MX-200 a solid performer, but judged the similarly priced Velodyne F-1500H to be superior, and the much-lower-priced Hsu Research HRSW12 to be at least comparable. Class C, he adds; however, they are oak, black oak, or a lacquer bead finish. (SGHT No.2.)

Snell EC-300 electronic crossover: $299

THX-certified three-channel (L/C/R) crossover intended for use with Snell K/11i satellites and Sub U800 sub. Designed to pass the 12420 Hz frequency of 80Hz. Includes front speaker brightness filter. Subwoofer output is adjustable in level. (SGHT No.1.)

Velodyne F-1500R: $1595 (inc. crossover, servo electronics, & amplifier)

Excellent value for the money, this versatile, low-distortion mono design almost approaches the performance of the Velodyne ULD-18, but instead adds more system coloration—perhaps, suggests LG, due to its gentle 6db/octave high-pass crossover slope. In its lack of the ‘18’s “effortless power” leads to a Class C rating, judged LG, though RJD gently suggests that “Borderline Class B” is more appropriate. Current “H” version includes remote control. “Impressive,” “clean,” and “tight” was how RJD described the bass quality of the sub. Deep synthesized bass made him feel “as though my ears were about to pop.” His preference of the subwoofers surveyed in SGHT No.2. (Vol.16 No.3, SGHT No.2.)

J

AudioControl Richter Scale System III: $349

Versatile six-band, half-octave, low-frequency equalizer and analyzer incorporating has wave-tone generator and 24dB/octave crossover factory preset to 90Hz. “Muffled” in sound quality, the Richter Scale nevertheless offers the woofer fan an excellent chance of achieving successful integration between subwoofer(s) and satellites. (Vol.12 No.3.)

Boston Acoustics Lynfield VR500 active subwoofer: $600

Good value for money. A change to the port position is claimed to eliminate the original “chuffing” noise mentioned in the review. (SGHT No.1.2.)

Paradigm PS-1000 active subwoofer: $559

Uses a 10” driver in a bandpass enclosure. Intended for use in Home Theater systems. Crossover frequency is continuously adjustable from 50Hz to 150Hz. Includes adjustable polarity control to phase subwoofer with satellite. SS found it to blend well with Titan satellites. (SGHT No.1.)

PSB Subsonic II active subwoofer: $599

Intended for use in Home Theater systems with PSB Alpha loudspeakers, the reflex-loaded Subsonic II gave useful response down to 30Hz with its out strain in SS’s room. SS had difficulty integrating it with the Alphas, however. (SGHT No.1.)

K

B&W 800 ASW subwoofer.

Deletions

Kinergitics SW-800 not auditioned in a long time.
One man's pain is another man's pleasure.

When Alan Severn, head of Arcam's Quality Control (QC) Team, gets a look of scrutiny on his face, Arcam owners are happy. Alan and the entire QC staff at Arcam make it their business to be sure the Arcam products you buy and own are built exactly as Arcam's design team intended. Just to be sure each Arcam sounds delectable playing music and movies, Alan's crack QC team tests every Arcam using computerized Automatic Testing Equipment (ATE). Then they listen to every one. The slightest glitch and they're on it!

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Arcam Xeeta One integrated A/V amplifier: $1900
An unusual product that eschews many features common to A/V receivers, but provides an unusually exalted level of musical reproduction, according to RH. At the same time, the notes, in reproduction of video soundtracks does not measure up to its musical promise — RH judges it to be only decent, lacking the low-level resolution, ambience, and diffusion present in the finest A/V receivers.

B&W Home Cinema THX loudspeaker system: $7000 (with two subwoofers, but without amplification)
Consists of three FCM-8 Front Thx Cinema Monitors ($1000 each, stands necessary), two wall-mountable Cinema Surround Monitors ($1500/pair), and two PCS-8 Cinema subwoofers ($1250 each). Somewhat mel low-balanced — the B&W system sounds less open than the McIntosh equivalent — but high dynamic range, clean midrange, good dialog articulation, and well-tuned bass impressed the heck out of the usually mild-mannered TJN. "Remarkable," he said, "and fun," referring to its ability to sound musically satisfying as well as to work well in a Home Theater context. Surround effects, especially with the front speakers — something that in general is rarely the case. (Vol.17 No.10, SGHTI No.1)

McIntosh C39 THX surround-sound audio/video control center: $3500
Early production samples of this processor/preamp had a problem with the Dolby Pro Logic II's power supply causing an image shifting. Later samples seemed fine in this regard, found TJN. While the C39 offers artificial surround effects, it appears to be intended more for the fist-first customer than for those who like to enjoy real and real-world effects. Optional THX card adds $500; RCT-1 universal remote control adds $320. (Vol.17 Nos.5 & 8, SGHTI No.1)

McIntosh THX loudspeaker system: $10,050 (with amplification and one subwoofer)
Consists of the McIntosh MC707/10 surround-channel power amplifier ($3500), three HT-1 THX LCR loudspeakers ($1100/each, stands necessary), two HT-3W wall-mounted THX surround loudspeakers ($2000/pair), and one HT-2 THX subwoofer ($1750 each). Though their directivity is to the THX specification, the McIntosh front speakers are free from vertical confounding effects. The overall system sounds "stunning" if somewhat sweet on movie soundtracks, found TJN, who preferred the HT-1's full-bodied balance to those of the Snell and Fogate front speakers. The McIntoshes also sounded rewarding and involving in live sound recording. TJN concluded that, as a complete Home Theater system, the Compositions set new standards in elegance, sound, and ease of setup. Look no further, he exulted. (Vol.18 No.9, SGHTI No.2)

Kenwood Home THX loudspeaker: $3100 with two subwoofers
Consists of Kenwood LS-X1F ICR speaker ($500 each); LS-X1S surround speaker ($600/ pair); and the SW-X1 subwoofer ($500 each). "Maximum bang for the buck," AS asserted. Finding them warm, natural, and balanced, he reckoned they demonstrated "excellent dynamic abilities, smooth harmonic response, excellent imaging capabilities, fine low-level detail resolution, and impressive bass response." Borderline Class B, he sums up. (SGHT2 No.1)

Kenwood KR-X1000 A/V receiver: $1200
RH was smitten by the THX-certified KR-X1000's transparent soundstage and great imaging. He also admired its smoothness and "freedom from hails in the mids and treble." Its THX processing, he found, was particularly worthy of mention, smoothing the treble on aggressive soundtracks and creating superior ambience. Lacks only to use with many other A/V receivers. "Not as aggressive as it should be," he chirped, "but a great value." (SGHT2 No.2)

Lexicon CP-3 Plus: $3200
Similar in concept to the older CP-1 Plus, the '3 is bigger, better, and incorporates a THX mode to optimize its performance in Home Theater systems. Though the Lexicon "an ergonomic marvel," but TJN enthusiastically recommends it — he found that he mainly used the surround modes rather than the ambience synthesis for the extraction of recorded concert-hall space. Bypass testing revealed a slightly weak bass. This loss in overall resolution — as well as a cold, edgy character — is laid by the CG at the feet of the internal ADCs/DACs, and keeps this otherwise excellent unit out of Class A. Review was of the original CP-3. "Plus" version was said to offer improved sound quality as more versatile features. (Vol.15 No.12, SGHTI No.1)

Stereo Review, May 1996
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Stereophile Vol. 18 No.12
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Stereophile, April 1996
($3795), DSP6000 digital active L/R speakers ($1600/pair), DSP5000C digital active center speaker ($2895), DSP5000 digital active surround speakers ($3595/pair) — due to its softened top end and somewhat colored center speaker. JA's auditioning of the system with the DSP6000C digital active center speaker ($8650 each) substituted for the $5000C suggests that Class A would be an appropriate rating. Those who need more inputs can add the Meridian 562V/170 audio/video controller ($1995 with a 517 DAC module). (Vol.18 No.6)

NHT VT-2 system: $3930 with one subwoofer $$$

Comprises the VS-2 Center speaker ($450 each), VT-2 L/R speaker ($1750/pair), H1P-1 surround speakers for SWP subwoofer ($1350 inc. SA3 amplifier). RH specifically admired the VT-2 main loudspeakers, VS-2 surround speakers, and the HDP-1 surrounds. Those units, taken together, had "wide dynamic range, good intelligibility, deep and powerful bass, and could play louder than anyone should listen." Because the VT-2s have sufficient bass on their own, the SWP subwoofer is unnecessary — save to those who wallow in LF excess, set he. "More bass and visceral impact than Infinity Compositions, a level smooth and refined," he sums up. (SGHT2 No.1)

Onkyo TX-SV919/THX A/V receiver: $2099.95

"Sets a new standard in A/V receiver performance," RH. "So well-thought-out that a synopsis of its highlights doesn't do it justice."

Includes a digital input, allowing it to be driven directly from a laserdisc player's digital output — which raised its already laudable performance a notch higher, in RH's ears. Slightly edged out on numbers by the Yamaha NS3000, he thinks, but when you take video performance and facilities into account, the Onkyo gets the nod. THX certification is hard to achieve in a receiver, which is in itself a recommendation. (SGHT1 No.1)

C

AMC AV81HT/THX surround sound processor: $280

DK finds the AV81HT compromises video detail and depth when used as an A/V switching unit, but considers it an excellent Pro Logic and line-level stereo preamp. In THX mode, however, steady, pitched sounds can be rendered virtually unaltered; in native mode, he says, "How water-like, surround-channel phasing action" — which he has heard from almost all THX receivers he's auditioned. For basic surround-sound applications — without the complications from dozens of features — this unit is "elegantly close to perfect." (SGHT1 No.2)

Atlantic Technology 350 THX loudspeaker system: $3500 w/stands

Consists of the Atlantic Technology 353 THX center speaker ($499 each); 351 THX L/R speaker ($499 each); 2 speakers cost $1798; 354 THX surround speaker ($449, matching stands cost $139/pair); and 352 PBM subwoofer ($1499/pair). SS felt this system "does not romanticize music or make dialog sound richer than reality," which is, perhaps, another way of saying that it's "hard to call convincing," as rich a lower midrange as other THX systems he's heard on. On the other hand, he maintained, the system exhibited "fine low-level detail that extends all the way down to its excellent subwoofer. Bass rendition is the best I've heard. Both the bass and the midrange. No doubt about it," he concludes, "a fine value." (SGHT2 No.1)

B&K AVP2000 Dolby Pro Logic surround sound preamplifier: $998

"If there were some kind of award for stuff-per-dollar," says the admiring DK, "... B&K's AVP2000 A/V Control Center would doubtless qualify." Preamp, Dolby Pro Logic surround processor, video switcher, dual-zone multichannel A/V control center, configurable subwoofer crossover — and with a learning remote to boot — the list does go on. DK was impressed by the unit's production value, its range of tone settings and fine tunability. "Potentially," he says, "he might have been impressed by the B&K in the circuit. Minor ergonomic gaffes aside, he concludes, the AVP2000R offers a lot of versatility and performance for its price. With a half-dangling price of $1000." (SGHT1 No.2)

Boston Acoustics Lynfield VR12 center speaker: $400 each

Relatively neutral if somewhat mellow sound quality, which TJN regarded as marginal Class B. Poorer under some circumstances. Treble can be a little peaky. Sensitive at 90dB/W/m, but low impedance mandates good-quality electronics. (SGHT1 No.1)

Denon AVR-2500 A/V receiver: $1000

Powerful ($3500); AV2 THX surround sound receiver with excellent Pro Logic performance, decided RH, the Denon's surround performance giving a slightly better sense of envelopment than the Sony/00ES. The electronics were also excellent, the remote control and on-screen display making setup a snap. (SGHT1 No.1)

Energy Reference Video System: $2540/system $$$

Consisted of three Energy RVS L/C/R speakers ($300 each), an EPS-150 active subwoofer ($650), a pair of B&K surround speakers ($550/pair), and a pair of ENERGY 2/SST-21 stands. "The Energy RVS Home Theater loudspeakers offer far greater performance than its modest price would indicate," declares RH — a sentiment that MF enthusiastically endorses. Exceptional clarity, transparency, and openness drew the admiration of both reviewers. RH also found its bass powerful, with a minimum of boombiness. (SGHT1 No.2)

KEF THX loudspeaker system: $7000 ($7200 with rosewood subwoofer)

Consists of the KEF AV1 THX powered subwoofer ($550); AV2 THX surround sound ($750 each); and the AV THX LCR speaker ($800 each). "These speakers proved very easy to listen to," purled JGH. Too easy, he felt: they lacked "snap" and immediacy, and darkened textures. On the other hand, they were capable of producing prodigious volume. "The best I can say for them is that — like a bland personality — they never irritated or offended." (Vol.19 No.1)

Mirage MC-ci center loudspeaker: $500 each

Mirage MBS surround loudspeaker: $350/pair

Coupled with two Mirage M-7si L/R speakers, these Canadian Home Theater speakers gave a sound in TJN's media room that was open, spacious, even grand. He did find the MC-c's off-axis response to sound hollow compared with its on-axis balance and found the speakers should make sure they sit in the center seat! (SGHT1 No.1)

Mondial MAGIC video ground isolator: $69.95 $$

Provides effective antenna and cable-feed isolation for those video and audio systems have hum problems. (Vol.15 No.15)

NAD 917 surround sound A/V preamplifier/tuner: $699 $$

"Competent and listenable," enthused TJN, who did not care for any of the three "Sound Space" modes provided for synthesizing surround for music listening. "In two-channel performance is respectable, but not special." As a Home Theater piece, however, he was less sanguine. "The midrange and top end were clean and sweet, never harsh or edgy," and, he felt, detailed. Spatial performance was also satisfactory. The bass lacked "jump," he posited. Worth a serious look. (SGHT2 No.1)

NHT VT-1A/1 Home Theater loudspeaker system: $2055

Consists of two NHT VT-1A L/R loudspeakers ($149/pair), which can be switch-selected between "Music" and "Audio" modes; a VT-1C center loudspeaker ($275 each); and two HDP-1 surround speakers ($380/pair). Can be used without a subwoofer, but then lacks dynamic range. RH used an NHT SW2P (see "Subwoofers") to good effect, achieving good integration with the front speakers. System balance is a little on the bright side, but the midrange was smooth. Imaging, as expected, was better defined in the "audio" mode. RH singled out the surround sound of the "TV shows" as excellent. They disappeared into the soundfield — exactly what all surround speakers should do." (SGHT1 No.1)

Paradigm ADP-150 surround loudspeaker: $429/pair

Worked well with Titans as the front speakers, found SS. (SGHT1 No.1)

Pioneer Elite SP-99D AC-3 surround sound processor: $1530

Bare-bones approach rules this unit out for those requiring multiple inputs, video switching, or a tape monitor. However, it is one of the least expensive "pure" discrete Processor. As a Pro Logic and AC-3 processor, he adjudged it quite fine (though he adds that it is a little early to make definitive judgments on the sound of AC-3 processors). High sound slightly shrut-in compared to the finest. It was "mechanically noisy." (SGHT2 No.1)

PSB 100C center loudspeaker: $179

A smooth midrange response allowed the 100C to blend well with PSB's Alphas, noted SS, who also commented that it added an immediacy and palpability with music and soundtracks that enhanced the musical experience. (SGHT1 No.1)

Rotel RSP-960AX Dolby surround sound processor: $599 $$$

Versatile processor with digital delay for surround channels that impressed RD with its ability to present a clear soundstage but without sounding "artificial." He did find the optional R8D bass boost excessive, however. No leakage from front to rear, which is excellent performance for the price. A winner. (SGHT1 No.1)

Snell 500 Home THX loudspeaker system: $5593 (stands necessary)

Consists of the LCR-500 front loudspeakers ($899 each), two SUB-500 surround speakers ($899 each), and a SUB-550 at $549 (the review was of the no-longer-available SUB-750). Matching STA-500 stands cost $149 each. "I was blown away. The sound was as good as anything I ever heard in a movie theater," proclaimed JGH of this system when he used it to play back video soundtracks. On music program, however, he found that, while the Snell had an "aweomously extended low end" and excellent image definition and soundstage depth, the overall sound was too polite, "like talking to the wall." CG and LL agree, the latter pointing out a residual brightness that's less noticeable on soundtracks than on music. RH loves the SUB-550. (Vol.15 No.12, Vol.17 No.4; SUB-550, SGHT1 No.1)

Kane THX-44 which to THX Audio Equalizer: $1299 $$

Offers one subwoofer channel and three full-range channels, each of the latter with a mix of N-octave controls below 1kHz and two parametric controls above that frequency. Lacks transparency, decided JGH, though he found it an excellent tool.

Sterophile, April 1996

HOME THEATER COMPONENTS

177
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for getting the most neutral tonal quality from a full-fledged video Home Theater system. (Vol.15 No.12)

RF Systems: RC-8-PS power sequencer: $1299
Automatic turn-on device recommended by JGH to Home Theater owners who like to press just one switch. Two sensing outlets; current version will switch up to 40A and will turn on/off up to 16 remote devices. (Vol.16 No.10)

Speaker Type CC-1 center loudspeaker: $499
Intended to be used with the Type K/11 L/R speakers, the CC-1, found RH, is best used limited to frequencies up to 100Hz to avoid restricting the system’s dynamic range. (SGHT1 No.1)

System Type G-1000S A/V receiver: $700
Well-built, powerful (90Wpc L/C/R; 30Wpc Surrounds) receiver lacks on-screen display, but makes up for it with a rich, smooth sound quality lacking any harshness, and a wide, deep soundstage, found RH. “A terrific bargain,” he summed up, even though he found the ergonomics confusing. (SGHT1 No.1)

Vandersteen VCC-1 center speaker: $495 each
Vandersteen VSM-1 Surround: 5895/pair
Vandersteen 2W active subwoofer: $1250 each

TJN thought the Vandersteen surround-sound system, when used with Vandersteen 3a, (6895/pair) loudspeakers as L/R, loudspeakers, offered “sheer listenability.” He found that careful attention to placement and cable interaction paid a big dividend: a system that excels on both music and video. The CVC-1 was marginal Class B, not calling attention to itself and blending well with the rest of the system. “Clean dialog,” he notes. The 2W did not add undue boom to the system, which may disappoint sensation junkies, but neither did high-level torture — like sipping fast to make it whimper. (Vol.18 No.4, 3A; SGHT1 No.2, system)

Yamaha RX-V2090 A/V receiver: $1499
Yamaha DDP-1 AC-3 surround sound processor: $599

Lowish power in the surround channels, but this receiver can accept Yamaha’s outboard DDP-1 AC-3 decoder. Less clean-sounding than the Kenwood KR-X1000, but intuitive to set up and use. Cinema 15SP processing works as advertised, expanding the soundstage and creating greater envelopment. “I also hear what a difference a surround sound system can do, you’ll never be happy with the matrix Pro Logic system again,” RH affirmed after auditioning the combination. However, he noted ear fatigue after watching an AC-3-encoded film — did it correlate with AC-3’s perceptual coding? (SGHT2 No.1, system)

Atlantic Technology 250 Home Theater loudspeaker system: $1536
Consists of the 251LR left/right speaker ($299/pair), 253C center speaker ($279), 2620PM active subwoofer ($629), and 254SR surround speaker ($329/pair). Optional 156ST stands cost $99/pair. JGH finds the System 250’s price to be almost beyond belief, given the unit’s performance. He finds the unique “timbre-adjusting” controls on the 253C center channel, as well as the 252PM’s ability to create three channels of amplification, to be “neat ideas.” He argues that the 252PM’s lowpass input filter should be defeatable, since those using dedicated subwoofer outputs may find themselves shaving off the bass. A fascinating buy, he concluded, offering a lot more than $15000 worth of surround sound quality. Price is for black finish— 251LRs and 254SRS available for an extra $20/pair. (Vol.18 No.4)

Parasound P/S-1000 surround-sound preamplifier: $850

Unusual feature allows two-channel sound to pass through unit when disengaged — a plus for music lovers. Somewhat noisy, notes DK, as surround-channel hiss is audible in low-level music and at realistic soundtrack volumes. SS concurs that Class D is the appropriate rating, finding the unit’s front channels “too noisy for serious listening.” Remote difficult to use. On the plus side, DK found video pass-through superb, and logic steering top-shelf. (SGHT1 No.2)

Yamaha RX-V590 A/V receiver: $549
“Has a lot going for it considering its modest price: enough power, good features, and connection flexibility (preamp-out jacks on all channels, for example), and decent audio and surround performance. Approved RH. He added that it was the easiest-to-use A/V receiver he’d encountered. (SGHT1 No.2)

K
Adcom GTP-600, Chiro C-800, and Citation 70 surround-sound processors; Audio Power Industries 111B A/V power-line conditioner.

Deletions
Lexicon CP-1 Plus not auditioned in a long time; Lexicon CP-2 discontinued.

HEADPHONES & HEADPHONE ACCESSORIES

A
Cary Audio Design CAD-300SEi: $3695
Stereo, single-ended tube, integrated amplifier related to the Cary 3000SE monoblock; includes a headphone output socket. RH regards the ultra-smooth, liquid sound of the 300SE to be world-class, manifesting a warmth and beauty unmatched by any electronics he’s had in his system. See “Amplifiers.” (Vol.18 No.3)

Sennheiser Orpheus HE 90/ HEV 90: $12,900
Stunningly beautiful, limited-edition system consisting of Bintream DAC, tube amplifier, and electrostatic headset. A quick, clear, transparent midrange and a pristine, airy treble, but a rather lean, laid-back lower midrange, found TJN. He also found the internal DAC to be less good than the rest of the package. Diffuse-field equalized. Additional HE 900 headsets cost $6900 each. (Vol.17 No.2)

Sennheiser HE 60 headphones/HEV 70 headphone amplifier: $1795
Developed from the expensive Orpheus, the HE 60 offers much of that system’s transparency at a much more affordable price. “A clear, transparent sound with a slightly lean bass, some emphasis at the very top end, but Nonetheless pristinely clean presentation,” said TJN, who also commented on the Sennheiser’s striking rendition of detail and complete lack of midrange coloration. (Vol.18 No.3)

B
Eyetronic Research ER-4S: $330
Placed directly in the ear canal, these unusual "earphones" impressed WP with their 24dB ambient noise isolation and their fast, accurate, transparent response. While he finds the Sennheiser HD-580s more comfortable for long-term in-ear use, he uses the ER-4Es for travel — and recommends them enthusiastically for any application where environmental noise interferes with quality listening. He notes that people with an aversion to placing foreign objects in their ears will find them another surprise. (Vol.18 No.7)

HeadRoom Supreme portable headphone amplifier: $399 $$$
Small, beautifully made, battery-powered solid-state amplifier based on a proprietary surface-mount module. (The module by itself costs $89.) Both versions feature switchable intrachannel cross-feeding and time delay to render headphone listening to stereo program less artificial-sounding. The effect of this is surprisingly subtle in A/B comparisons but proves much less fattening in long-term listening sessions. Includes able-boost switch. Drives dynamic headphones (though not, it’s reported, the low-impedance AKG 1000s) to high levels with authority and excellent clarity, without this being associated with any brightness. JA bought a Supreme to drive his Sennheiser HD 580s, with which it makes a very musical-sounding combination. (Vol.17 No.1 & 2; see also WP’s review of the HeadRoom HD-580, Vol.16 No.10)

Home HeadRoom headphone amplifier: $599
This AC-powered sibling of the portable HeadRoom amplifiers impressed WP no end. “Performs on an unusually elevated level,” he concluded, agreeing with other Stereophile writers that the HeadRoom crossed over process, while subtle in its effect, significantly reduces listener fatigue. SS also finds the HeadRoom, driving Sennheiser 580s, to be the ideal location recording monitor. (Vol.18 No.1)

Koss ESP /950: $799.99 $$$
Class A because of its “ravishing midrange,” said TJN of the ‘950 electrostatic at its original price of $2000 — though he did point out a little euphony softening at the frequency extremes and a warmer balance than the Stax Lambda Signature. At the reduced price, it’s a sonic bargain. (LG has even seen the ‘950 advertised for as little as $499). (Vol.15 No.12)

Sennheiser HD 580: $349 $$$
Uniformly smooth, ultra-detailed open-back dynamic headphones with full, extended low frequencies. AG found the HD 580s to be “too civilized,” but WP comments that some audiophiles miss the grain and other “hi-fi” signifiers that the Sennheisers simply do not exhibit. Comfortable. JA’s dynamic headphone reference. (Vol.17 No.12; also see “Industry Update,” Vol.17 No.1, p.41; TJN’s headphone review in Vol.17 No.2, p.114; and SS’s review of the Sennheiser IS 850 headphones in Vol.18 No.10).

C
Grado SR60: $69 $$$
An inexpensive cousin to the Class A Grado HP 1 and HP 2, the SR60 offers a similar, rather dark-toned balance, with a full bass and excellent resolution of detail. A more expensive unit in Vol.18 No.10, however. Uncomfortable. The $150 SR 125 — not yet reviewed — is a JA favorite. (Vol.17 No.6 & 10)

D
Beyerdynamic DT 990 Pro: $159
Excellent dynamic headphones, with a neutral midband balance and extended low frequencies. Borderline Class B performance. (Vol.10 No.9, original version; Vol.14 No.3, DT990 Pro.)

K
Grado SR125, Melos SHA Gold, Audio Alchemy Headphone Amplifier v1.0, McCormack Micro Headphone Drive.

Deletions
Sax SR-Oneagle, Sax SR-Lamba Pro Signature, Sax SR-Lamba Pro 3, Sax Lambda Pro Classic, and Sax SR-34 Professional headphones, due to concerns over current availability in the US. Sax SR-1A-1 headphone amplifier replaced by SHA Gold, currently recommended; Sax SR-1B headphone amplifier, Sax SR 650 II and HeadRoom Headroom HD 560 II no longer available. Sennheiser IS 850 Digital Infrared Wireless headphones too expensive for sound quality.

Stereophile, April 1996

179
A Model of Perfection

"Rookie of the Year" award - for the most impressive new product by a new company - must go to Paragon for their Regent..."

Wes Phillips, Stereophile
Vol. 17, No. 9, September 1994

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Shane Tenace, High Performance Review
Vol. 12, No. 4, Winter 1995

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- Harry Pearson — HP'S Year's Best - The Absolute Sound®, Issue 100 (reprinted with permission)

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FM ANTENNAE

Editor's Note: No indoor antennas can compete with a good roof or mast-mounted outdoor antenna, but as apartment dwellers often don’t have a choice, here are some options, as to the following manufacturer's specifications.

Antenna Performance Specialties
Sniper FM antenna: $495
Antenna Performance Specialties QFM-12
FM antenna: $175

The Sniper is a huge (330°), custom-ordered, outdoor antenna with 12:1 true forward gain at all FM frequencies and extremely low SWR (Standing Wave Ratio). Requires rugged ham-radio-antenna-type installation, which may eliminate its consideration by all but the most dedicated. Yet, DAS feels it sets the standard for antenna performance. The QFM-12 is still large (200") but manageable, he reports, offering 10dB gain and only slightly less performance than the Sniper. (Vol.19 No.5)

AudioPrism 8500: $499
63"-tall, remote-controllable, vertical phased-array passive FM antenna for indoor use, offering a more directional pickup than the less-expensive 7500. (Also offers an omnidirectional pattern.) Will prove optimal for those who desire to receive relatively weak stations competing with stronger stations on similar frequencies broadcast from other directions. (Vol.14 No.6)

AudioPrism 7500: $299
Low-VSWR (Voltage Standing Wave Ratio), vertically polarized, omnidirectional indoor passive design that will prove optimal in urban, high-signal-strength areas. 89" high. (Vol.12 No.5)

AudioPrism 6500: $125 (wood cabinet)
If you don’t have the room for an external antenna, then the diminutive 6500 could be a good substitute, offering good reception except for DXing purposes. A lot more efficient than the small, active, omnidirectional antennas offered by some companies, thought B&K. Vinyl-covered version costs $99. (Vol.13 No.9)

Magnum Dynablast 205 FM Booster: $295
Excellent RF amplifier to optimize selectivity and reception in areas of poor signal strength. (Vol.10 No.6)

K
RadioShack 15-1833 indoor antenna.

RECORDING EQUIPMENT

Editor's Note: With the exception of the Postex and the Crown SASS-P, none of the microphones listed below has been formally reviewed. However, RH has had extensive experience with many professional models and has compiled most of the thumbnail sketches of their sonic signatures. Other professional models to look out for on the secondhand market are cardioids from Schoeps (CZ-1 & C900), B&K, Milab, and Calrec (AMS), figure-8 ribbons from BrO and Coles, omnis from Schoeps and B&K, and PZM mikes from Crown (though it’s very easy to get a rather colored midband with the PZMs). The Shure SM81 cardioid is also reported to have a quite flat response. Anyone about to undertake serious recording should ignore all “amateur” microphones; as a rule of thumb, you should spend as much, or more, on a good pair of mikes as you do on your recorder.

A
Briel & Kjaer 4006: $1660
Omnidirectional, 48V phantom-powered, 1/2" capacitor microphone with high dynamic range, extended bass response, and a basically flat response marred only by a small peak in the top audio octave and a rather depressed lower treble. Comes with both diffuse-field and free-field grids. A “cone” is available to give true omnidirectional response and a spherical acoustic equalizer to give a more directional response. A calibrated sample is used by Stereophile to measure loudspeaker responses. (NR, but see Follow-Up in Vol.14 No.10, and audition Stereophile’s Current CD and track 5, index 7 on the first Stereophile Test CD.)

Briel & Kjaer 4011: $1660
Cardioid cousin of the 4006. JA finds this uncolored "8" mke to give solidly defined, vivid stereo imaging when used in an ORTFF configuration, which is what he used to record Stereophile’s 1995 Festival CD. (NR, but see Vol.19 No.1)

EAR 824M stereo microphone preamplifier: $3350
Extremely neutral, very quiet, all-nike, balanced stereo preamp from Tim de Paravicini, with switchable level controls and 48V phantom mike power. Used by Water Lily Acoustics and also to make Stereophile’s first two commercial recordings. We also use it in conjunction with a Briel & Kjaer 4006 omnidirectional microphone to make all our loudspeaker measurements. (NR)

Manley Reference A/D converter: $7000
After using this solid-state, UltraAnalog-based two-channel converter to master Stereophile’s Intermezzo and second Test CD, JA felt it to be one of the best-sounding around. One of the winners in the October 1991 AES Sound-Off. Offers DC trim controls, balanced and unbalanced analog inputs, and AES/EBU and S/PDIF data outputs. Analog peak meters with "0" set to -120FS are an anachronism, however; you’re better off using a Darror or Sony AES/EBU meter or the LED or LCD peak meters on the DAT recorder (or whatever you use to store the data) to avoid running out of hits on peaks. (NR)

Nagra-D: $25,000-$35,000 depending on options
The ultimate one-box digital recorder: to see it is to want to touch it is to want to buy it, says JA. The superbly built Nagra uses open-reel tape to store two or four channels of up to 24-bit data. (One 5" reel of Ampex 467 holds one hour of four-channel data or two hours of two-channel data.) Four channels of both analog and digital (AES/EBU) I/O. Built-in A/D converters offer 20-bit resolution. Built-in mike preamps offer phantom power, enormous headroom, and are superbly quiet. Sophisticated built-in software offers versatile usage options; optional DOS program allows a directory to be created for each tape, to access individual tracks, overload points, examine error rates, etc. Nagra can even diagnose your machine over the phone, using its built-in ISDN port. Recording Festival with the Nagra — coupled with the editing process — made JA a big fan. "Operationally, the unit was a dream," he enthused, adding emphatically that it was the finest audio recorder he has ever used. Portable, practical, and capable of producing tapes of the highest quality. Highly recommended. (Vol.19 No.3)

B
AKG C414/8B/ULS: $1199
A popular, large-diaphragm condenser mke, the 414’s extended bass and flat frequency response make it ideal for a variety of applications. Switchable polar patterns, variable pad, and selectable LF rolloff add to its versatility. Transformerless TL2 version costs $1499. (NR, but audition track 5, index 11 on the first Stereophile Test CD.)

AMS Soundfield Mk.V: $8500
Having used both Mk.III and Mk.IV versions, JA feels that the highly praised variable pickup pattern of this stereo/Ambisonic mke is let down by an overall “graininess” and lack of midrange detail, coupled with a slightly hard lower treble.
"...when I want to really hear what a component is doing - as free as possible from the effects of its environment - it ends up on The Shelf."
Wes Phillips, Stereophile, February, 1996 Vol. 19, No. 2

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Wes Phillips, Stereophile, February, 1995 Vol. 18, No.2

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Nevertheless, it's excellent at capturing a true stereo image with width and depth. Price includes recording kit, windscreen, 20m of dedicated multiconductor cable; 100m of cable on a reel adds $450 to price. (NR, but audition track 10 on the first Stereophile Test CD1 and track 13 on Test CD2.)

Audio Engineering Associates 350TX stereo microphone preamplifier: $1785
JGH's reference microphone preamp, the 360M is very quiet, super-portable, and features M/S mixing circuitry to adjust soundstage width and depth in real time. (NR)

EAR "The Mix": $4500
Using a single 61J8 tube and a fist-sized output transformer, this very expensive rectangular-capacitor (sourced from Milab), switchable-pattern (out-of-the-box Judt-ii) make is somewhat noisier than average and is shut-in in the highs, but has extended low frequencies and a midrange that's extremely true to the original sounds. "No trace of edge or glare," says RH. Borderline Class A. (NR, but audition Stereophile's Poem and Intermezzo albums and track 1, index 8 and tracks 11-18 on the first Stereophile Test CD2)

Neumann U-87A microphone $17,850
A perenial favorite among recording engineers. Wide, flat response gives it a similar balance to the AKG 414, but with more "width" in stereo mixing applications. Used extensively for vocals. (NR, but audition track 5, index 12 on the first Stereophile Test CD1.)

Panasonic Pro 3700 R-DAT recorder: $1590
According to PWM, the 3700 clearly outperforms most mass-market DATs with its MASH oversampling encoders and pretty good analog circuitry. A buy-back storage device when used with an external A/D converter such as the Pygmy, Apogee, or McIntosh gives better sound with redesigned filters, easier head cleaning, a jog/shuttle control knob, more flexible controls, and a lower price tag than its predecessor, the 3500. Includes useful error rate, headache, and SCMS status indicators (SCMS can be switched out when recording from the AES/EBU data input). Analog inputs/outputs are all balanced XLR. Only inconvenience is that a rear-panel DIN switch is used to select between AES/EBU and SPDIF digital inputs/outputs. Digital output has high jitter level; sounds significantly better, when used with, for example, a Sonic Frontiers UltraJitterbug (NR)

Pioneer Elite PDR-99 CD-R recorder: $2000
Affordable CD-R machine is compromised by SCMS and expensive (25$/disc) "consumer" media that are only 60 minutes long — as opposed to the 74-minute "professional" discs currently selling for $250 each. SS found it easy to use, and capable of 16-bit recordings as good as — or better than — his digital originals. Recordings made from analog sources suffered from some loss of low-level detail, due, SS surmised, to the inadequate onboard A/D converter. (Vol.19 No.11; also see JGH's Follow-Up in this issue.)

Sony DTC-2000ES SBD DAT recorder: $2500
Well made, versatile machine features Sony's Super Bit Mapping, which will result in more than 16-bit resolution in the midrange. "The best-sounding, all-in-one 'prosumer' deck available," notes JGH, adding that it "is the recorder of choice for the serious amateur who can't afford a Magnatone." (Vol.17 No.11, Vol.18 No.11)

Sony TCD-D7 DAT recorder: $700 with case
Tiny portable machine that makes excellent location recordings, provided you use an external A/D converter. Built-in tape inputs have no defeatable bass rolloff. Short internal battery life is a problem. A company called Eco-Charge (P.O. Box 956, Boulder, CO 80306) makes an external lead-acid battery pack ($119.95) that SS highly recommends. AC-powered Sony RM-13K "system adaptor kit," which includes digital input/output, is mandatory for serious use. (Vol.18 No.1 & 6)

Sony SBM-1 A/D processor: $599
This outboard Super Bit Mapping A/D converter is intended to be used with Sony's TCD-D3 and TCD-137 portable DAT recorders and, reports SS, addresses and solves most of its shortcomings. "99% of the sound of the DTC-2000ES at 25% of the price," he enthuses. Reliable, extremely portable, and good-sounding, its only tradeoff is a loss of ergonomatic functionality dictated by its small size. (Vol.18 No.6)

C

AKG C460B/ULS/C K61 $649
A small-diaphragm condenser microphone with removable cardiod capsule (omnidirectional, hypercardiod, vocal, and shotgun capsules are also available). Sound is very detailed, but the tonal balance leans toward the thin and bright, and it has some off-axis peakiness, making it a less than optimal choice for realistic two-mike stereo. Good on drums, however. The C460/C61K is said to be much improved over its predecessor, the C451/ C61K. (NR)

AKG BlueLine microphone: $438-$618
Super-compact capacitor microphones that use a common powering module ($259) with interchangeable twist-click capsules ($179-$359). "Extraordinarily clean, well-balanced sound at ridiculously low prices," notes JGH. (NR)

D

Sony WM-D6C Pro Walkman cassette deck: $400
A pocket-sized stereo recording system of surprising quality and versatility. Alvin Gold feels that to spend more on a cassette deck would be a waste of money. Less-expensive WM-133 ($270) is half the size but keeps most of the quality. Higher wow and flutter, however. (Vol.7 No.6, Vol.10 No.6)

K

Apogee and Prism 20-bit A/D converters, Dolophy AES/EBU peak/average level meter, Bryston BM-P2 microphone preamplifier, Schoeps Colette microphones.

Deletions
Arcam Delta 100 DOLLY cassette deck discontinued; Crown SASS-P Mk.II microphone system not auditioned in too long a time.

Test Equipment

AudioControl Universal SA-305A
Spectrum Analyzer: $955
Portable (battery-powered) and inexpensive service analyzer with pink-noise source, ANSI Class II filters, accurate calibrated microphone, and six non-volatile memories. Parallel port can be used with any Centronics-compatible printer to print out real-time response. Factory update increases maximum sp level capability, and resolution to 0.1dB. (Vol.11 No.6, Vol.12 No.3)

George Kaye Audio Labs Small Signal Tube Checker: $549
The essential companion for the dedicated tubeophile, this well-made device tests voltage gain, noise, and microphony with the small-signal tube used in typical preamp circuits. Tests both 6.3V and 12V types. As well as a meter, a headphone jack allows users to hear what's right and wrong with their favorite tubes, as well as to look at the output and the distortion/noise waveform.

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NEW!
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Gold Line DSP 30 Spectrum Analyzer: $1500

Portable (battery-powered) ½-octave analyzer with higher dynamic range and better signal resolution than the ubiquitous AudioControl. Features six memories and a variety of post-proces sing options also controlled by an external PC through its RS-232 port (though the supplied software is clumsy). (NR)

Miscellaneous Accessories
Audio Advisor Elixif AC Polarity Tester: $98

Components tend to give the best sound with the lowest potential between their chassis and signal ground. JGH found using the Elixif be to an easy, non-contact method of optimizing this aspect of performance, in conjunction with AC "cleaner" plugs. (Vol.15 No.6)
Bluenote Midas Series Hi-end Tube Dampers: $89/pair

Italian devices tube microphonic, JS discovered, resulting in tighter focus, integration, and better sound. They enhance transparency, he worried that they might subtly dampen "bloom." Even so, "I consider them an indispensable accessory," our valiant audition made. (Vol.19 Nos.2 & 4)
Combak Harmonix RF-41 Tuning Cable Rings: $146/box

Rings fit over BCA plugs and speaker-cable terminations, and offer small improvement in clarity and dynamic contrast, found MC. (Vol.16 No.7)
Combak Harmonix RF-56 Tuning Bases: $220/eight

Combak Harmonix RF-57 Tuning Bases: $240/eight

It's hard to see how these little rectangles can affect the vibrational behavior of anything to which they're attached. MC, however, found them to significantly clean up the sound of speakers when attached to the drive-unit mounting-bolt positions. He also recommends trying them on the circuit boards of electronic components. SS found that they improved the sound when he applied them to the pcb of his beloved Denon EJC-40 MKII preamp. "If you have a component that you want to extract every last bit of performance from, you should seriously think about Combak dots, no matter how silly they seem," he says. (Vol.16 No.7)
Crannolin Preservit/Doxiet Contact Conditioner: $18.95 ◆

The right stuff for cleaning up dirty and/or oxidized plugs and contacts. Available from Old Colony Sound Lab. Tel: (603) 924-5626. (Vol.10 No.6)
Dynaclip Postman Binding-Post Wrench: $76/clip

The ideal way of tightening five-way binding-post connections without over-torquing. The reviewer's friend. (Vol.17 No.11)
Enabled Tubesox: $65

While they "enhance-indicator" ◆ Small one-size-fits-all sleeve made from a weave of Kevlar and copper wire that's said to both lower a tube's operating temperature and minimize microphonic. DO confirmed the latter, but not the former. (Vol.16 Nos.2 & 5)
Gishon Exorcist system demagnetizer: $150

Small device that plays a kHz tone through your system, the loudness of which drops to nothing over a period of 35 seconds, thus eliminating any residual DC magnetism in your components (loudspeakers excepted). "A quieter, wider presence-
tation coming from a blacker, more velvet backdrop," is the result noted by JS. RD agrees, JA points out if you don't intend to keep the transformer, you should wear hearing protection to prevent your hearing from developing a notch at the same kHz frequency, which will make things sound different. (Vol.17 Nos.6 & 9)
The Original Aluminum Jacket: $90 each

Purple cloth bag, filled with a proprietary compound, that's intended to be hung over interconnects, speaker cables, and AC cords and grounded via a flying lead to the wall socket. Who can say whether it's due to the elimination of RF interference or of mechanical vibrations in the cables? But all the magazine's staffs who have tried the Jackets report that they clean up a system's sound, making the silences more silent. "Ehrassingly tweaky-looking but they work," says RD. The largest effect was on the interconnect's cords of source components. JE also reported a significant improvement when he hung a Jacket on his preamplifier's separate ground wire. (Vol.16 No.11)
PEARL 1W Tube Coolers: $6-$255
dead

Fiend metal heatsink available in a number of sizes to cool both small-signal and power tubes, and recommended for them with the Melos SHA-1. (Vol.16 No.5)
Purist Audio Design System Enhancer: $150 ST, and JD found that this CD-R, when played through a system for 24 hours, improved the overall sound, JS noting that "the entire presentation seems quieter, background noise reduced ... and the soundstage seems wider and definitely deeper." JD, however, found that it made its system sound worse! Expensive for a CD, said RD, but it's "a bargain in terms of what it does." "It works!" expostulated JS. Yes, it works, says ST, but he points out that you can get the same effect from the less-expensive XLO/ Sheffield Labs JWP-JDP models. (Vol.16-No.5, Nos.3, & 9)
Shakki Electromagnetic Stabilizer: $230

Passive component consisting of passive circuits intended to absorb and dissipate the EMF generated by active audio gear. JS and WP found them effective to varying degrees, depending on the components they were used with. JS discovered that "focus, transparency, clarity, and speed were better, as was the sense of pace." RD found that the Sonic Frontiers SFJ-2 MKII sounded better — less upper-midrange grain — with the Shakki placed between his turntable and his preamp. WP uses them on his power amps, but cautions that using too many in a system will close it down and make it sound dull. (Vol.19 No.2; also see BW's Follow-Up on this issue.)
Shun Mook Books: $50

Shun Mook Spatial Control Kit: $450
Shun Mook Spatial Control Quartet: $2080 for four stands and 3 Mpingo discs

The Mpingo Disc is an ebony disc just over 1.5" in diameter and 0.5" thick. Three Discs bonded to a wooden LaserDisc Spatial Control Kit, which can be used to "tune" a system's imaging. Read JS's review carefully to get the full scoop on how to use the Discs, but JS is convinced that they effect a major improvement in the sound. "Yep, they work," agreed ST; "they make my SBT turntable sound like JA's Linn!" "Sub-yeah, right," ponts JD. Though he's not sure why the Shun Mook Discs have any effect, ST does point out that they can make the sound worse if not used correctly. "Try one or three. Never, never two." (Vol.17 No.12)
Sumikko Kontak: $50 ◆

Far and away the best contact cleaner CG has used. "The gains in transparency and purity are startling," gushes he. (NR, but see "Industry Update," Vol.15 No.5, and "Manufacturers' Comments," Vol.15 No.5)

Sumiko Tweek Contact Enhancer: $19 ◆

This contact enhancer for use on plugs and terminals actually does improve the clarity of the resolution of the sound of an already excellent system. Keeps freshly made contacts fresh by excluding air. (Vol.10 No.6)
AudioQuest RF Stopper: $345 (4oz. Opaque) ◆
TDK NE-C09 Digital Noise Absorber: $14.95/pair ◆

ST found these ferrite rings to improve the sound from CD when clamped over the interconnects between the player and preamp. He also found the sound improved — less grit — when a ring was clamped over the coaxial data lead between transport and processor, though we would have thought that this would increase jitter. Best used with AC power cords, JS feels. Equivalents can also be obtained from Radio Shack. (Vol.14 No.1, TDK)
WBT 0011 RCA plugs: $100/set of four ◆
The best, although original steel locking collet, now replaced by brass, gave rise to neutros. WBT 044 plugs cost $50/four. (NR, but see "Industry Update," Vol.12 No.5)
K Versalab Red Rollers & Wood Blocks, Caig ProGold contact enhancer, XLO/Reference Recording Test & Burn-in CD.

Power-Line Accessories
Audio Power Industries
Power Wedge Model 116 Mk.II AC-Line Conditioner: $639 ◆

Featuring RF filtering, three isolation transformers with dual secondary feedings six AC outlets, and MOVs to absorb voltage spikes on the AC line, the Power Wedge also offers four filtered outlets into which to plug your power amplifier(s). Highly recommended. "Makes the silences more silent," says JA (though LL cautions that, in some systems, it may detract from overall dynamics). Other models are available with fewer outputs, e.g., the $389 Power Wedge 112 Mk.II. Audio Power's $279 Power Enhancer (Vol.17 No.12) and Power Link AC cords ($159/6) further enhance the performance of the Power Wedge, found JA, the Power Enhancer I increasing the linearity of his system's bass performance. (Vol.14 No.11, Model 1; Vol.17 No.12, Models 116 & 112)

Bob Young Audio BYLYX AC-line filter: $585

Formerly sold under the Wave-Perfect name, the BYLYX lets through just the 60Hz AC fundamental, and is recommended as an essential addition for the Audiostatic ES-100 electrostatic loudspeaker. Version of the line filter are available for other electrostatic speakers. (Vol.17 Nos.3 & 12) Lightspeed CL646 ISO line filter: $325/line

With four analog and two digital ground AC outlets (all "hospital grade") and an 1800W capacity, the transformerless Lightspeed filter can handle all but the most power-hungry system, says SS. RD likes the fact that, in contrast to some transformer-based power-line conditioners, it doesn't hum, nor does it limit dynamics. SS points out that it appears to be good at solving ground-loop problems. (NR)
Kimber Power Kord: $165/6' ◆

ST uses Kimber Kords throughout his system, and noted tremendous differences with a Jads Defy-7. But try before you buy, he warns. (NR)
MIT Z-Center power-line conditioner: $1495 inc. Z-Cord
MIT Z-Isol-Duo power-line conditioner: $1495 inc. Z-Cord
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John E. Johnson, Jr., Secrets of Home Theater and High Fidelity, May 1995
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Peter Mitchel, Stereophile Vol. 18 No. 1, January 1995
"Hsu's HRSW12V is a wonderful subwoofer. Its good looking and simple to use, and its performance invites nothing less than superlatives, especially given its price."
Tom Nousaine, Sound & Image, February/March 1995
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Stereophile, April 1996
good stand has the following characteristics: good rigidity; spikes on which to rest the speaker, or some secure clamping mechanism; the availability of spikes at the base for use on wooden floors; if the stand is steel, provision to keep speaker cables away from the stand to avoid magnetic interaction; and the correct height, when combined with your particular speakers (correct height can be anything from what you like best to the manufacturer's design height for best drive-unit integration). Though Stenheim has neglected to review speaker stands, it's not because we think they're unimportant. We know that good stands, every dollar spent on good stands is worth $5 when it comes to sound quality. Brands we have found to offer excellent performance are Chicago Speaker Stand, Arceti Rigid Riser, Celestion Si, Merrill (see Vol.18 No.1, p.39), Sound Anchor, Targets, Superstructure, Sonicstyle, and Reference, and Limn. (Sound Anchor also makes an excellent turntable stand, reports TJN.) Interface material between the speaker and the stand top plate is critical. Inexpensive Blu-Tack seems to reduce the amplitude of cabinet resonances the most (see Vol.15 No.9, p.162).

Arceri speaker stands: $145-$495/pair • Available in versions for the ESL-63 and the original Quad (both $295/pair), and for the MartinLogan CLS series. Arceri's designs enable electrostatic speakers to perform as God intended. Clamps them in a rigid embrace, raise the panels the optimal height off the ground. Now includes Super Spikes. The CLS version allows both the height and back-tilt of a pair of Logans to be optimized. Arceri's inexpensive Rigid Riser stands ($145) offer adjustable height. (Vol.10 No.1, Quad ESL; Vol.17 No.6, MartinLogan CLS)

Arceri Superstructure I and II: from $175 • Basic package includes one shelf. Versatile, well-made, reasonably priced metal equipment-rack system that doesn't require assembly. Our experience from two samples of the II indicates that the shelves can be a little undersized, however. New, bigger speakers eliminate any tendency toward instability. (Vol.14 No.11, Vol.16 No.10)

Arceri Levitation LDS-1 and LDS-2 component stands: $249/$498

Unique system effectively isolates components from vibration by suspending them with wires. The LDS-1 consists of two LDS-1 stacked with the LSK-1 stacking kit ($25); the CW-1 support kit for one component costs $25. (Vol.17 No.12)

AudioPismo Iso-Bearings: $45.95/three • Squishy, non-reactive polymer balls with plastic cups are recommended by CG for effective acoustic isolation. (NR, but see Vol.15 No.9, p.162)

AudioQuest Sorbothane Feet • One of the best means of isolating components from vibration. A set of four big Feet costs $60; four CD Feet, $39. (NR)

Audio Precision R-series rack system: from $139

System consists of R-30 Expandable Rack, $179; R-ES Expansion Shelf, $49; R-CC Cable Channel kit, $35; and R-10 Amp Stand, $69. Excellent value, noted SS, but not rigid enough for use with a turntable. (Vol.16 No.10)

Billy Bags 1823/1824 amplifier stands: $318/$238

Billy Bags 4800 component stand: $718 standard, $1098 custom Billy Bags 4800 component series component rack: $1090

RH had nothing but praise for these solidly built — and sand-filled — welded metal component racks. Available in stock configurations, or custom-built for specific systems. RH cites tightened image focus, greater dynamic contrasts, and increased resolution of low-level detail as results of using the Billy Bags stands — although he noted that turntables may require additional, or different, isolation schemes. (Vol.17 No.12, Vol.18 No.11)

Black Diamond Racing The Shell: $450-$530 depending on size

Heavily built, but with a clean, smooth look from torsional flex, this loaded carbon-fiber-isolation platform impressed WP with a "marked increase in perceived silence" when placed under equipment. He also noted that low-level musical information became more prominent with the support in his systems. WP maintains that when he "seems to really hear what a component is doing — as free as possible from the effects of its environment — it ends up on The Shell." (Vol.19 No.2)

Bright Star Audio Rack of Gibraltar 1 equipment stand: $1495-$1595

Bright Star Audio Big Rock 1: $175-$199

Bright Star Audio Little Rock 1

Isolation Pod: $129-$144

Bright Star Mini-Rock F VPI isolation base: $89

A very effective isolation system for control of unwanted vibrational energy. Individual components float on a sand bed for energy dissipation, and are weighted down with the Little Rock to minimize spurious vibrations. Sonically, the payoff is evident.overs. the music's spatial and particularly its tonal balances. D.O. R.N adds that this system consistently tightens the bass, increases sonic transparency, and smooths treble tache and grain. Big Rock for the VPI TNT turntable costs $275. The Mini-Rock F is specially sized for use under the TNT's flywheel. (Vol.16 No.5, Vol.18 No.11, Mini-Rock F)

Coban Harmonix Tuning Insulators: RF-65: $390/four; RF-66: $470/four

Combak Harmonix TU-201 large-size Insulators: $650/four

Complex feet that MQ found to improve the sound of some CD players and preamps but not others. Some components may need mass-loading to bring the feet into their effective frequency range. (Vol.16 No.7)

German Acoustics Steel Cones: $11 each

These effective brass-colored steel cones have removable hardened tips. (NR, but see Vol.15 No.9, p.162)

Golden Sound DH Cones: $60/3 cones

Ceramic cones that WP finds effective under a wide variety of equipment — because of their compact size he finds them to be a better fit for use under equipment than their taller brethren. Rounded tips lessen the danger of fish wounds. (NR)

Magro 24 Component Stand: $448

Unique stands lean against the wall. Elegant, highly recommended by WP, who found that his system sounded better (presumably because the stands are non-ferrous). Console costs $218; CD holder costs $68. (Vol.18 No.2)

Merrill Stable Table II turntable stand: $1097

Exceptionally stable support, but too massive for spring floors unless some means — eg, jacks — is found to support the floorboards. An appropriate amount of lead shot will cost around $100. RH's reference turntable support for five years running. (Vol.12 No.10, Vol.18 No.11)

Michael Green Designs AudioPoints for electronics: $59/set of three

Michael Green Designs AudioPoints for loudspeakers: $99/set of four

Sharp-pointed cones made of solid milled brass that RH found to be "a food for the bass and improving the midrange focus of Dunlavy SC-IV loudspeakers. A set of four variously threaded loudspeaker points costs $69-$79. (NR)

RoomTone Deluxe JustRack: $329-$599

Rigid, well-made component rack. Similar
Close your eyes and be transported to the Santa Fe Chamber Music Festival, for three of the highlights from the 1995 season. Stereophile recorded the performances live—using time-aligned microphones and 20-bit recording technology. The resolution is extraordinary; the soundstage is spacious; the dynamics are as wide as the CD medium allows. The music and performance are nothing short of spectacular. If this doesn't become one of your favorite discs, we'll buy it back! If not satisfied, simply return the disc within 30 days of receipt and we'll refund your money in full!

The program consists of Aaron Copland's Appalachian Spring... Darius Milhaud's classical (and jazzy) Creation of the World... and the World Premiere recording of Tomiko Kohjiba's The Transmigration of the Soul, a piece that both will stir your soul and stretch your hi-fi system to the limits. Be one of the first to own this audiophile-reference disc. Time-aligned microphones! No compression or limiting used in the mastering. Recorded with 20-bit resolution, preserved in the midrange and treble by the Meridian 518 Mastering Processor. Wait till you hear the string tones, transients, the ambience and the air.

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ClampTack — See Vol.15 No.3, p.140 — allows the components to be squeezed to reduce the levels of vibration-caused sonic spurious. (Vol.16 No.10)

Sanus Systems CF-45/CF-33 component stands: $375/$324 ☞
Component racks of five (45) and four (35) shelves that TJN recommends as being good value. Assembly required. (Vol.14 No.11, Vol.16 No.10)

Shun Mook Super Diamond Resonator: $400/set of three
Expensive ebony foot with a diamond-tipped steel shaft that JS found to work well under CD transports, amplifiers, and preamplifiers. (Vol.17 No.2)

Solidsteel Model 410 component stand: $600 in black
Beautiful component rack from Italy, with individually spiked shelves. Can be mass-loaded. JE found that his system's sonics improved, compared with the massive wooden rack he'd been using previously. Silver finish adds $50. (Vol.17 No.2)

Soundstage X05-series component racks: $415-$450 ☞
A series of component stands that SS described as "colorful, elegant, and remarkably stable and resonant" when used to couple the X055, X051, X050, X058, X450, X042 extension module, $169; and the X049 rectangular frame, $65. (Vol.18 No.3)

Sumiko Navcom Silencers: $75/four ✞
Roberto Deutsch finds these damping feet to be essential for isolating to floor that Mission's Isolator (NR) Target TT series equipment racks: $180-$195 ✐
Finished in black fabric, these useful but expensive racks feature rigidly braced rectangular construction and tubular steel legs (four spaced on right and left by number of shelves from two to five). Spiked feet supplied, with top shelf resting on upturned, adjustable spikes to optimize it for turntable use. Target's wall-mounting turntable shelves ($160-$170) are possibly the best way of siting your turntable out of harm's way, says JA. (NR)

Tiptoes: $12.50 each ✐
The Mod Squad's greatest invention. The least expensive way of improving the bass and midrange definition of virtually any loudspeaker when used to couple the speaker or stand to the floor. Version with thread or screw costs $1750 each. (Vol.20 No.1)

Townshend Audio Seismic Sink: $349-$725 depending on size ♦
MF was amazed at the difference this inflatable isolation platform made to the sound of his turntable — even though he'd already gone to great pains to isolate it. “Focus improves dramatically,” he gorged: “the noise floor lowers, images solidify, and the sound takes on a softness... that is much closer to what live music sounds like.” He did not care for it under tubed preamps, however, although SD noted an improvement in clarity and focus when used under his SPL-2. SD also recommended stacking them, claiming that additional benefits accrue. Much to his astonishment, he found use of the Sinks audibly improved the performance of CD transports and D/A processors. (Vol.18 No.11, Vol.19 No.1)

Vibratone Model 2212 Active-Air Self-Leveling Air Table: $1995 plus S&H ♦
Isolation platform designed to stabilize electron microscopes and other precision laboratory gear that SD enthusiastically endorses for use in hi-fi systems. “Unlike many improvements that blend into your normal expectation after a few weeks of acclimatization, you’ll appreciate the visceral presence that the Vibratone adds to both digital and analog playback every time you spin some wax or plastic,” he predicted. He was also chuffed by improvements in imaging, low-level microdynamics, timbral truth, and percussive impact, claiming that “every aspect of the sonic presentation took on new life.” JS found the Vibratone to work well with CD players and transport. Active system requires source of compressed air. The 2210 Passive-Air version, which needs to be pumped up manually, costs $1695 plus S&H. (Vol.17 No.5, Vol.18 No.11)

Black Diamond Racing cones, A.R.T. Q-Dampers.

**Acoustic Treatments**

ASC Tube Tanks: $189-$659, depending on size and style ✐
Relatively inexpensive but remarkably effective room-acoustics treatment. Tube Tanks soak up low-to-high bass standing-wave resonances like sponges. The $315 Studio Tank provides easy tunable upper-bass absorption that JE found to be a boon with the Martin-Logan CLS IAs. RH recommends the Tower Tanks ($273-$355, depending on size), which proves very useful at eliminating side-wall reflections. “Highly effective,” summed up RH. (Original Tanks, Vol.9 No.3; Studio Tanks, Vol.15 No.2; Tower Tanks, Vol.16 No.12, Vol.19 No.1)

Combak Harmonix RFA-78
Room Tuning Devices: $955/16
Quarter-sized metal discs that the user fixes to the ceiling and floor of the listening room. The (surprising) effect was to improve the sound’s dynamic shadings, cleaning up reverberant decay to the benefit of intelligibility. MC found that this was especially apparent on live-sounding voice as well as on reproduced sound. (Vol.16 No.8)

Room Tunes (Deluxe floorstanding): $239/pair ✐
Room Tunes Corner Tunes: $89/set of four ✐
Room Tunes Echo Tunes: $45/pair ✐
Idiosyncratic and effective “less-is-more” acoustic treatment for your listening room. GL was highly impressed, though others point out that care should be taken to not overdo things. The “Basic Tune Pak” room-treatment set of four TuneStrips, four CornerTunes, and two EchoTunes costs $285. Four TuneStrips cost $179. A Mini-Tune Pak (same 10 pieces, but smaller) for small- to medium-sized rooms costs $199. (Vol.15 No.3, Vol.16 No.1)

RPG Diffuser Systems

“Acoustic Tools for Audiophiles” ✐
Effective method of adding absorptive and diffusive treatment to a listening room. RPG Diffuser Systems offers complete room-treatment packages, called “Acoustic Tools for Audiophiles I & II,” which can be installed in a matter of hours. RPG also offers its “SoundTrac” package for no-compromise Home Theater installations, working directly with the client, architect, and/or acoustic consultant. (Vol.11 No.4, Vol.16 No.5; see also TJN's article on listening rooms in Vol.14 No.10)

**Interconnects**

Alpha-Core Goertz Ag: $270/1m terminated with RCA's
Alpha-Core Goertz Coopers: $270/1m terminated with RCA's
Flat-conductor interconnects that DAS enthuses over. Offers lower inductance than shielded cable, yet has excellent RF rejection. “Impressive.” (NR, but see JYS’s interview with Alpha-Core’s Ulrick Poulsen in Vol.19 No.3)

Audio Magic Sorcerer: $699/1m balanced with Neutrik XLRs, $649/1m unbalanced with WBT RCAs
SS recommends this expensive, handmade, fairly flexible, Teflon-insulated silver cable for its “high resolution, precise soundstage presentation, and excellent low-level information transmission.” (NR)

AudioTruth (AudioQuest) Lapis x3: $495/1m pair terminated with RCA plugs $575/1m pair with AQ custom XLRs and direct gold-plated FPC sockets and pins ☞
Tonaly, the latest version of Lapis (which uses RCA plugs made from Functionally Perfect Copper, or FPC, with the gold plating applied directly to the copper) seems to fall midway between the “mellow” cables — MIT, Monster — and those that are rather up-front in the treble, such as Madrigal HPC and Straight Wire Maestro. JYS, however, that this trend toward a lack of grain that allows correct instrumental textures to flow freely and a deep, well-defined soundstage to develop. Auditioning of current-production Lapis (as of 2/91), which uses Teflon insulation and long-grain, solid-silver conductors, revealed that this is the AudioQuest interconnect yet, apart from their even-more-expensive Diamond x3. Auditioning of identical lengths of Lapis fitted with Neutrik XLRs and AudioQuest’s own custom XLRs suggests that the latter represents a useful step forward in sound quality (!). Some compatibility problems with the XLRs,

Stereophile, April 1996 191

**Loadspeaker Cables & Interconnects**

Editor's Note: Rather than classify cables into the annual four "Recommended Components" classes, we've just listed those cables that members of the magazine's review team either have chosen to use on a long-term basis or have found to offer good value for money. They are therefore implicitly recom
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however, according to JA. (NR
AudioTruth (AudioQuest) Diamond x2:
$725/1m pair ☆
Superb resolution of detail coupled with a musically
corally natural midrange and excellent low-frequency
weight. Diamond x3 (1995/1m pair with XLRs) also audition. The x2/x3 nomenclature refers to the number of conductors. (NR)
Cardas Hexlink Golden Cross:
$750/1m pair, balanced or unbalanced
Slimmer and more flexible than Five C, the Golden Cross offers outstanding resolution of low-level detail, finds SD, with an even, wide-open balance and a quiet, silken-black background. Gone is the slightly forward upper mids noted by JE of Five C. (NR)
Cardas Hexlink Golden Five C:
$625/1m pair
Gold-secion-stranded, PTFE-insulated interconnect needs an intermittent break-in period, but then has a glorious bass and an excellent sense of pace and dynamics. JE found that the upper mids sounded a bit forward. (Vol.15 No.12)
Cello Strings:
$320/1m pair terminated with RCA plugs ☆
$388/1m pair terminated with XLRs ☆
$478/1m pair terminated with Fischers ☆
$596/2m pair terminated with Fischers ☆
“Remarkably good.” says LR. (NR)
Discovery Signature interconnect:
$450/m, RCA or XLR termination
Dual shielded, multi-strand, low-capacitance cables whose performance cost ratio impressed JS. Also, the cables feels like the RCA connectors sourced from Clearaudio—which were of extremely high quality and low capacitance. “Excellent imaging and dynamics,” quotes he; “a lot of performance for the money.” “Very high frequencies,” adds RN. (Vol.18 No.12)
Ediejiang: $550/1m pair
“At last!” exclaims WP. “A flexible high-end cable.”
He found it easy to manipulate in tight confines, and is happy to report that its sweet highs, articulate midrange, and tight, well-defined bass response won't weigh on the money. (NR)
Finestra Argento Signature Mk.II:
$1795/1m pair
Unbelievably expensive cable uses “six-nines” silver conductors, each insulated with Teflon. JE found that it offered exceptional clarity with linear-sounding signals, eliminating hums when using it as a phono lead. (Vol.16 No.5)
Kimber KCAG: $350/1m pair, RCA or XLR termination XLRs ☆
Unshielded but astonishingly transparent, and offering improved image focus and even better clarity when compared with Kimber's PJB, A JE and "TN" favor. (NR, but see Vol.16 No.7)
Kimber KC-PBJ: $66/1m pair
RCA or XLR termination $$$
Unshielded cable that CG found to come very close to KCAG in his system, citing its HF detail, air, clarity, and tonal accuracy. For those with RFI problems, Kimber's RC1 ($79/1m pair terminated with RCAs or XLRs) is the same cable with a grounded shield, but doesn't sound quite as good. (Vol.17 No.7)
Magnat Type VI: $595/4' pair unbalanced, $695/4' pair balanced ☆
“A masterful ability to simultaneously achieve state-of-the-art levels of both musicality and accuracy,” says JE. Combines a rich, full-bodied sound with well-defined detail. (Vol.18 No.2)
Magnat Type III: $195/1m balanced, $295/4' pair balanced ☆
Bearing a strong family resemblance to the more expensive Type VI, the Type III is less impressive at the frequency extremes, according to JE. (Vol.15 No.12)
MIT M-1350 Reference C TERMINATOR:
$1995/1m pair; $2060/1.5m pair
Fast, detailed, non-present sonically — and very, very dear! With truly neutral components, an unbelievable level of resolution becomes possible. Not kind to any form of bloom, smearing, or associated euphoria, however. Massive network cables at both ends make it impossible to use multiple sets — there just isn't enough room behind the preamp, moans WP. (Vol.19 No.11)
NBS Signature: $1600/4' pair
Very expensive, heavy, and only marginally flexible cable that JE made his reference due to its complete lack of any sonic signature. He did break three of the Neutrik RCA connectors used, however. (Vol.16 No.11)
Siltech 4-245S:
$410/first meter with WBT 001 RCAs, $225/second meter or un terminated
Amazing transparency and imaging, says JA of this silver-conductor cable. (NR)
Siltech 4-80S:
$1050/first meter with WBT 015, $578/additional meter
Even better than Siltech 4-24, the very expensive 4-80 competes with AudioTruth Diamond with its combination of smoothness and retrieval of detail, JA found, but its balance is a little brighter overall. (Vol.19 No.11)
WireWorld Gold Eclipse: $1000/1m pair, RCA or balanced; $75/0.5m
Expensive but very transparent, with little editorial effect on the signal in either balanced or unbalanced form (NR).
Straight Wire Master II: $275/1m pair terminated with RCA plugs (MSI) or balanced with Neutrik gold XLRs; $80/additional meter ☆
Less laid-back than AudioTruth Lapis or MIT 330, with superb presentation of detail. May be too bright in some systems. (NR)
Synergistic Research Alpha Stereiling: $150/1m pair
One of the best-sounding interconnects GL has tried; he also notes that it is easy to handle and is fitted with excellent RCAs. Available shielded or unshielded. (NR)
TARA Labs Rectangular Solid Core Decade: $695/1m pair terminated with RCAs
Better sound than the excellent TARA Labs Master Generation 2 by a margin that RD would not have thought possible. Wonderfully open-sounding and detailed throughout the range. (NR)
TARA Labs Rectangular Solid Core Master: $395/1m pair terminated with RCA plugs
An RD favorite, with a clear, open, uncolored quality. Clean, precise, and stunningly uncoldored, agrees WP. The Generation 2 revision preserves the clarity of the original but has eliminated the stiffness that RD hated about the earlier version. GL notes that it comes with equipment-friendly locking RCAs. Conductor configuration mitigates against tight turns or kinks, however, so plan cable routing carefully, advises WP. Unique common shield connection makes this cable WP's turns to when plagued by woozy hums — besides, he allows, “it just makes good sense.” (NR)
Transparent Audio MusicLink Ultra:
$850/1m pair terminated
Similar in broad terms to the MITs that Transparent Audio used to distribute, the Transparent interconnect works well in a WATT/Puppy-based system, says JA. (NR)
Transparent Audio MusicLink Reference:
$1900/1m single-ended pair
Very, very pricy, but very right at capturing a correct sense of timing, says WP. Not even to be considered, however, unless you've dealt with the basics in your system, he warns. (Vol.18 No.5)
XLO Type 1:
$200/1m pair plus $75 termination ☆
JE found that, in the right system, XLO's Type 1 can sound marvelous, with an improved sense of dynamic contrast. Soundstaging is a little flattened, however, compared with Cardas and Magnan Vi. (Vol.15 No.12)
XLO Type 1.1 Signature:
$625/terminated 1m pair
$500 each additional meter-pair (shielded version available at slightly greater cost)
JS thinks describing this interconnect to be a piece of cake: "neutral, detailed, very fast, alive, excising, with a really big stage, plenty of well-controlled deep bass, a humless mid bass, and a somewhat leaner midrange than some cables, and airy, open highs." (Vol.18 No.9)
XLO Type 3.1 Signature shielded phono cable: $750/terminated 1m pair; $600 each additional meter-pair
"How does Roger [Skoff] do it?" marvels JS, entranced by the "ultrasilent" presentation, blacker backgrounds and, in dimensional manner, and constant image and tonal balance that characterize this cable. Its retrieval of information is, he posits, "without peer." (NR) JS considers it supremely neutral, "its clean, quiet, quick, and wide-band response could exacerbate bright or gritty recordings." (Vol.18 No.9)
Yamamura Millenium: $995/1m pair
MF notes that the expensive Yamamura interconnects are among the most liquid-sounding, luxuriously open, detailed, quiet, grain- and etch-free cables he's ever had in his system! The only interconnect to come close, he adds, is the Magnan Type Vi. (NR)

K
Straight Wire Virtuoso, Synergistic Research Phase Two Mk.V, and Resolution Reference. (NR)
Deletics: Acrotec 6N-A2010, Expressive Technologies IC-1, Monster Cable MS2K Sigma, and XLO Type 4 not auditioned in a long time.

LOUDSPEAKER CABLES

Alpha-Core Goertz M1 Ag II Matched Impedance: $58/@f, $760/6f pair terminated Alpha-Core Goertz M1 2 Matched Impedance: $730/@f $$$
"JS was quite taken by the 9-gauge, high-capacitance silver cables, calling them "clean and delightfully fast." He also admired their extreme high resolution and wonderful spatial qualities, although he did note some degree of tightness in the bass. The less-expensive copper version is an L1 favorite. (Vol.19 No.3)
Audio Magic Sorcerer: $1395/8' pair
A silver cable insulated by PVC surrounded by silica sand that SS found to have higher resolution and a more neutral harmonic balance than his reference Dunlavy speaker cable. (NR)
AudioQuest Midnight Hyperlink:
$415/10' pair
Almost as good as AudioTruth Clear at a much lower price. (NR)
AudioQuest Indigo: $6/f+ $75/5' spade-lug termination $$$
Neutral, clean sound with excellent resolution of detail, says RH. "The bargain in affordable cables." (NR)
AudioQuest Type 4: $2.50/ft $$$ ☆
"The best cheap speaker cable on the market, and much better-sounding than F14," says CG. "Try this stuff before laying down long green for expensive cables." (NR)
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AudioQuest F14: 95¢/ft $$$$ 
Inexpensive flat-twin solid-core cable that RH enthusiastically recommends as excellent value for money. (NR)

AudioTruth (AudioQuest) Argent: $50/ft plus $35/pair spade-lug termination $$$$ 
Many of the sonic attributes of AudioTruth Dragon, RH's reference, at a fraction of the cost. Excellent dynamics, articulate bass, and good soundstage depth. Musically coherent and natural, sexier. (NR)

AudioTruth (AudioQuest) Clear Hyperlitz: $1595/10' pair terminated, $1295/8' pair terminated (most common length) $$$$ 
Very expensive, but solid bass reproduction with a clean (and) open midbass and treble. Can sound rather boxy in some systems, but always defines the term "neutrality," says JA. Uses "6N"-pure copper braid in a complex lay that brings every conductor to the surface to the same extent. (NR)

AudioTruth (AudioQuest) Sterling: $2395/10' pair terminated, $1935/8' pair terminated $$$$ 
AudioTruth (AudioQuest) Dragon: $3895/10' pair terminated, $3135/8' pair terminated $$$$ 
Two of the best reference speaker cables that are maximally smooth and transparent, according to RH and JA. JA also finds the powerful bass performance of Sterling to be its strongest suit. (NR)

Audio Research Litzline 2: $550/class $$$$ 
The only cord really that JA has ever heard that JF found this under-promoted speaker cable to perform well in a diverse variety of systems, working especially well with ARC's own amplifiers. (NR)

Cardas Hexlink Golden Five C: $840/1m pair, $5360/10' pair $$$$ 
Very similar in character to the Cardas intercon- nect. A JE reference cable. (Vol.15 No.12)

Discovery 1 23 speaker cable: $320/8' pair terminated $$$$ 
"Unbelievably high performance for relatively low cost," effuses JS. Unhithed cable that can be configured for single, bi, or tri-wiring at no additional charge for termination. JS found it "had great bottom-end heft and pitch definition, a clear and detailed midrange, and excellent highs (if not quite accurately reproduced, a side effect of some of the multiple-kilobase cables)." (Vol.18 No.12)

Dunlavy Audio Labs DAL-26: $300/8' pair, $375/12' pair, $420/16' pair $$$$ 
An inexpensive cable that SS recommends highly. While it doesn't warm up or harmonically enrich a source's sound, neither does it emasculate or whiten it, he notes. A nice ergonomic touch is the use of interchangeable screw-in terminations (¼" spades, ¼" spades, or banana plugs, 30/set of four). (NR)

Kinkade Gold: $100/ft $$$ 
An expensive hyper-pure silver cable that can offer a glimpse of audio heaven. Significant system sensitivity, points out DO, so be sure to check for compatibility before you buy. (NR)

Kimber 4TC: $5/ft $$$$ 
Kimber 5C: $9/ft $$$$ 
A double run of 8TC greatly improves the sound, feels DO. Excellent bass. (NR)

Kimber 4PR: $1/ft $$$$ 
Least-expensive cable from Kimber was found to have good bass, but a "zippy" treble and poor soundstage, according to DO. With inexpensive amplifiers, however, its good RF rejection, compared with zipcord and spaced-pair types, will often result in a better sound. (NR)

MIT MH-770 Reference CV Terminator: $500/10' pair $$$$ 
Astronomically expensive network-equipped cable, but WP notes that he's not heard anything like it!

Extended but never harsh, and capable of plumb- ing the depths like none other in his experience. Not suitable for tube amps, and it would be silly to put the MITs in anything but a system capable of the highest resolution. Large network boxes at both ends—their impedance suggests Halliburton attaches—nake cable routing an absolute bear. (Vol.19 No.9)

MIT MH-850 Multi-Bandwidth CV Terminator: $9995/8'/pair, $125/45' pair 
The special tri-wire harness for the Avalon Radian HC was reviewed in conjunction with the complete Spectral/Avalon/MIT 2CD3 system. RH noted that this complex, "Multiple Bandwidth Technology"-wired speaker cable "weighs in as an impressive equalizer for the amplifier world. The only cable I can think of, other than the Spectral DMA-180 amplifier." However, as a component of the system that RH described as "staggering" in its ability to reveal low-level detail, it must be accorded as successful in passing that information along. "The sound-staging in particular," he raved, "was more three-dimensional than any other system I've heard." (Vol.19 Nos.1 & 2)

Monster Cable M.5: $285/5' pair, $570/8' pair, $600/15' pair, $900/25' spade-terminated 
TJ recommends this inherently lean-sounding speaker cable for use in over-warm systems. (NR)

Naim NACAS: $13/m $$$$ 
Inexpensive cable that ST found to work well with the Spendor S1000 loadspeaker. Worth investi- gation as a good-value cable, thinks JA. (NR)

NBS Signature: $900/3' pair 
JE reference. (Vol.16 No.11)

Nordost Fladiene FL12G: $79.95/6' pair 
JE didn't find this cable a sonic blockbuster, nor could he recommend it for dedicated audio systems. Yet he did find that, given its modest price and its ability to be run unobtrusively under carpets and along flat surfaces, it would be quite useful in Home Theater systems, where its minor sonic shortcomings would be palliated by its practic- iality. (Vol.18 No.5)

OCOS cable: $10/ft plus $75/pair termination $$$$ 
Distributed by Sumikko, this idiosyncratic cable was found by JA to be "an affordable and claris- ity cable in which he hadn't heard from other cables. He found the bass to be a little lightweight, but voices it a "three-star" design. (NR)

Purist Audio Colossus: $1330/1.5m pair, $2200/4.5m pair $$$$ 
The cable used to be solid silver. I've found a cable with a fluid-filled insulating jacket. AB found "resoundingly open stag- ing with a remarkably distinct lower-midrange/upper-bass presentation that lends music a great sense of pace." (NR)

RadioShack 10-gauge solid core hook-up wire: $3.99/60' spool $$$$ 
Ridiculously cheap way of connecting speakers, yet ST reports that this cable is okay sonically. You have to choose for yourself whether to space or twist a pair for best sound (or even whether to use a double-up the run for less series impedance). (NR)

Siltech FT-12: $955/first meter with spades, $327/additional meter 
MC's reference cable, but high inductance man- dates careful amplifier choice. (NR)

Straight Wire Maestro II: $560/8' pair with gold spade lugs or pins, $30/additional foot 
The cable that LA found to work best between the Krell KSA-250 and Thiel CSS5s. (NR)

SYMO Overture II: $30/ft with gold-plated spade connectors 
Distributed by Apogee Acoustics, this relatively

inexpensive cable works well with, you guessed it, Apogee. TJ's reference for use with the Stages. (NR)

Synergistic Research Signature Nos. 2 & 3: $605/10' pair 
A hi-z, wide-bandwidth cables that let the music speak for itself, sum's up JS. Dealer can fax Synergistic a list of components and receive back a recommended list of cables depending on sys- tem, room acoustics, and customer's musical tastes. (Vol.19 No.11)

TARA Labs Rectangular Solid Core Decade: $125/ft plus $200 termination 
Not as much of an improvement over the RSC Master Generation 2 speaker cable as the RSC Decade interconnect represents over its RSC Master Generation 2 counterpart. (NR)

TARA Labs Rectangular Solid Core "Master" Generation 2: $45/ft plus $90 termination 
JD found that these cables have wonderful lucid- ity and a top-to-bottom coherence that's truly amazing. The Alimghor doesn't have the brewed up warmth of RH's favorite cable but it has an endearing smoothness, "but without obvious loss of detail due to soft- ness," JD's favorite speaker cable: "Quite spec- tacular in its resolution of spatial information," he says. "Unlike the larger Generation 1 cable, there's more flexibility, notes R.D. JS feels it is "definitely reference caliber." (NR)

Transparent Audio Music Wave Reference cable: $4100/8' pair, $4300/10' pair, $4500/12' pair, spade-terminated 
Hugely expensive, notes WP, but this speaker cable resolves the timing involved in music—but not just at the level of overtones relating to funda- mentals, but also at the global harmonic/melodic level. They also, he adds, portray silence as a phys- ical, not just a theoretical, reality. That means he likes them. (Vol.18 No.5)

XLO Type 5.1 Signature: $120/running foot plus $150 termination/pair 
"The jewel in the XLO crown," states JS empha- tically, despite confessing it to be "...big, heavy, flabby, and a positive hear to trun-wire. Small prices to pay, he feels, for sound he praises as "transparent yet full-bodied, and they imaged like nobody's business. The entire bass range was as close to perfect as I've ever heard from a cable. Midbias detail was unfettered by colorations and cues (by, for example, the strings...). The upper range and treble... were completely grainless and free of brightness or other artifacts." (Vol.18 No.9)

XLO Type 5: $55/ft, plus $100 termination $$$$ 
"This is the real deal of the XLO line," JE. "Very transparent and detailed."—AB. Perhaps a touch of midrange prominence makes it less suit- able for speakers that are already balanced too for- ward in this region. Not as expansive as TARA or Master Monza; works well with tube amp. (Vol.15 No.12)

Yamamura Millenium 5000: $1650/2.5m pair 
Articulate, refined-sounding, and expensive, revealing a wealth of delicate harmonic textures—particularly in the upper bass and treble, according to SJ. The low-end response favors nuance and detail over ultimate authority and weight, he adds. Its thin, pewter-coated spades and cloth jacket demand extra care when han- dling. (NR)

Cardas Golden Cross, Straight Wire Virtuoso, WireWorld Eclipse, Kimber Black Pearl.
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Digital Data Interconnects

Editor's Note: Extensive auditioning by RH suggests that all the coaxial data cables listed below are better than conventional TosLink-fitted, plastic fiberoptic cables, which in general don't give as tight a bass or as focused a soundstage. “You don't get that essential sharpness of image outlines, the sound becomes more homogenized,” quoted RH, which is why we no longer recommend any of the TosLink interconnects. JA feels that coaxial interconnects generally fall short of the sonic standard set by the “AT&T” ST optical data connection. He also points out that the specific character of any particular cable will depend heavily on the transport and processor it connects.

Acrotec 6N-S1030, Monster Cable M52 Sigma, TARA Labs Space & Time Phase II, all not auditioned in a long time.
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found this relatively inexpensive cable to work well with the Bitwise One D/A, though he warns that its soundstage is somewhat veiled compared with AudioQuest’s Digital Pro. (Vol.16 No.11)

Aural Symphonics Digital Standard: $257/1m, $379/1.5m single cable © Neutrik RCA connectors with a sliding shield make ground before signal connection. Vivid and forward rendering, with sharp soundstage focus. (NR)

Cardas AES/EBU: $245/1m Ultrafast, affordable datalink that has bested all comers (other than the Orchid) in SD’s system as of spring ’96. (NR)

Ensemble Digilux 75: $250/1m with RCA or BNC connectors “Positively the best-sounding 75 ohm digital interconnect I’ve found,” writes DO. Smooth, good focus, and harmonically correct. “A digital link that does it all, from top to bottom, without skimping on focus or harmonic integrity,” he summed up. (Vol.16 No.11)

HAYE: (Canare) Digiflex Gold 1/75 ohm Digital Interconnect Cable: $45.95/3’ $85

Before you try any of the expensive coaxial links, you should try this inexpensive, true 75 ohm cable, advises CG, who rates it as his first choice in a digital cable at any price, even preferring it to the Kimber AGDL. (Vol.16 No.7)

Illuminati D-60 datalink: $325/1m with RCA or BNC termination Highly recommended. The best coaxial cable RH has used, and his current reference. Smooth yet highly detailed, spacious soundstage, and lack of hardness and edge. (NR)

Illuminati Orchid datalink: $750/1.5m with XLR termination Very expensive, but the best AES/EBU link JA has used. JS is also a fan; “A Stunner!” agrees SD. (NR)

Kimber AGDL DigitalLink:

$175/1m with RCA or XLR termination © Best coaxial datalink ST had tried until he heard the expensive Goldmund. JE found it to excel in the retrieval of detail, while it also featured an extended and powerful bass. (Vol.15 No.2 & 6; see also CG’s HAVE/Canada review in Vol.16 No.2)

Madrigal MDC-1 AES/EBU datalink: $285/1m Excellent soundstaging and image focus, reported JE, when used between the Mark Levinson No.30 and 31, as well as an open-sounding, extended treble JA concurs. (Vol.16 No.11)

Marigio Apparition Reference Signature: $595/1m This slightly corpulent digital cable, which has become less stiff and easier to work with in its last several iterations, is a JS favorite. “Air, air, and more air!” he shouts, adding that the midrange is as good as digital gets. (NR)

MIT Digital Reference: $325/1m, $395/2m “Said to reduce reflections in the cable and thus reduce jitter,” quoth RH, who listened to this RCA-tipped S/PDIF cable in the context of his full Spectral/Avalon/MIT 2C3D system review. Given the plethora of references to high resolution, transparency, and spectacular soundstaging in that review, it seems to pass the signal along with minimal degradation. (Vol.19 No.1)

The Mod Squad WonderLink Digital I: $195/0.5m, $225/1m single cable, $275/1m balanced © Exceptionally transparent presentation, thought JA, with excellent soundstage depth and natural midrange. Clunky gold-plated RCA plugs are actually old-fashioned RF connectors with RCA and BNC adaptors. (NR)

NBS Signature AES/EBU balanced digital datalink: $600/1m “A midrange with a magical combination of body and clarity,” found JE in his Mark Levinson system, though not as much clarity as the AudioQuest OptiLink Pro 2. (Vol.16 No.11)

Parasound DataBridge: $89.95 Coaxial datalink that RH finds to give smooth treble, deep soundstaging, and tight bass. Not as resolving as the TARA Labs Digital Reference or Aural Symphonics Digital Standard, but a good value. (NR)

TARA Labs Space & Time Digital Reference: $195/1m terminated © Laid-back, relaxed presentation, excellent resolution of soundstage depth. Smooth treble adds to pleasing analog-like warmth. Silver-plated RCA plugs slightly undersized, making connection difficult. (NR)

TARA Labs RSC Digital Generation 2: $295/1m Very stiff and awkward to handle, notes RJA, but it does sound exceptionally transparent, especially in AES/EBU form between his PS Audio transport and processor. RH also recommends it highly. Current version is less stiff than its predecessor. (NR)

XLO Type 4.1 Signature AES/EBU datalink: $325/1m, $250 each additional meter "At its best, well-mated and happy, the 4.1 can knock your socks off," JS exclaimed. However, in his opinion, digital datalinks are extremely dependent upon component interactions; careful audition with the precise elements comprising your system is essential when evaluating them. (Vol.18 No.9)

XLO Type 4: $150/1m, $50/additional 0.5m © JE found this unshielded cable to excel in soundstage presentation, while being warmer and fuller than the Kimber AGDL. “The best digital cable I have yet heard in re-creating a believable soundstage with layers upon layers of width and depth,
ample ambience, and pinpoint localization," he announced. (Vol.15 No.2)

K

Mod Squad Wonderlink II, MIT T3, ASM Labs Mamba ST link, Ultra Resolution Translite ST link.

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Highly recommended by DO and much used by professional designers, LEAP imports raw drive-unit data (it accepts Audio Precision and MLSSA files as well as data produced by Audio Technology's own LMS system) and optimizes a speaker system's crossover network to meet the user's target specifications, either on- or off-axis. (It also averages responses to give a speaker's power response.) The fully loaded LEAP 4.5, which includes a SPICE-type passive network analyzer and an Active Filter Library, costs $1195; a basic version, to which modular upgrades can be made (each one is $175), costs $395. Available from LinearX Systems, Inc., 7556 SW Bridgeport Rd., Portland, OR 97224. Tel: (503) 620-3044. Fax: (503) 998-5958. LinearX BBS — (503) 998-9326 — offers support for LEAP and LMS. (Vol.13 No.11)

The Listening Room: $47.50 •

Inexpensive but excellent computer program for PCs and Macs. Available from Sitting Duck Software, P.O. Box 130, Veneta, OR 97487. Tel: (503) 935-3982. Allows an audiophile to move simulated loudspeakers and a simulated listening seat around a simulation of his or her room (in three dimensions) to find the position that gives optimal performance below 200Hz or so. The suggestions made by TJN in his review have been incorporated in the latest version, which can also store different setups as separate files. Upgrades are available for $15 inc. S&H. The Macintosh version (6750) requires 1Mb RAM and allows local optimization of listener and/or speaker positions. It also models the woofer's LF limit and slope. The Windows version ($89.50) is called "Visual Ears"—see "Industry Update" in this issue. (Vol.13 No.12)

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# Equipment Reports

## Audio Artistry Dvorak Loudspeaker System

Shannon Dickson

| Main Panels: Drive-units: two 8"-cone dipole midrange/bass drive-units, 1" aluminum-dome tweeter. Frequency range: 100Hz-25kHz, extends to 40Hz with subwoofers turned off. Minimum amplifier requirements: 35Wpc tube, 100Wpc solid-state. Nominal impedance: 8 ohms, 3.2 ohms minimum at 2.1kHz. Dimensions: 56" H by 12" W by 4" D, mounted on 2.25" base. Weight: 50 lbs each. |

I first heard Audio Artistry's Dvorak loudspeaker during the 1994 WCES. I was leaning against the wall in a corridor of the Sahara Hotel's hi-level complex, trying to avoid being run over by swarming hordes while shootin' the breeze with Corey Greenberg. I was thankful for the respite from what seemed to be an endless succession of rooms playing Eric Clapton's "Tears from Heaven." As happens at most CE Shows, a particular tune emerges as the "official" demo track and gets saturation coverage. "Tears" was definitely the one for the '94 Hi-Fi lovefest. It's a great song—but after hearing it 30 times in a row, you do start to feel a little tight around the collar.

Chatting with Corey, on the other hand, is always fun, so when a nearby door opened up, filling the hallway with the very same song, you'd have thought I'd hardly notice. On the contrary, I immediately lost my train of thought, said "Aloha" to Corey, and drifted into the room like a Steptford wifeheed ing a subliminal message. By the last refrain of Clapton's poigniant ballad, I felt like I was hearing the song for the first time. During the next hour's demo of classical, jazz, and rock tunes, I was genuinely enthralled by the way these speakers conveyed the essence of whatever music they were reproducing.

The impression of that first experience was so strong and persistent that I just had to see for myself if this speaker really did possess a unique and compelling communicative skill.

**Artistry**

Audio Artistry is located in a suburb of Raleigh, NC and was formed almost three years ago by president Marshall Kay, a test and measurement applications engineer for Hewlett-Packard specializing in the application of HP's wide variety of electronic test equipment. Marshall teamed up with Kurt Pasquale (an expert in computer-aided design) and Tom Hoffman (owner of a local high-end retail store) to build, refine, and market a line of speakers designed by co-partner Siegfried Linkwitz. Mr. Linkwitz is a senior design engineer for Hewlett-Packard (see the interview elsewhere in this issue), and is the same Linkwitz of the widely used Linkwitz-Riley crossover topology.

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1 The Audio Artistry Mozart loudspeaker was reviewed in the August '94 issue of Stereophile, but it is not a Linkwitz design. —JA

2 Siegfried Linkwitz, "Development of a Compact Dipole Loudspeaker," presented at the 93rd Audio Engineering Society Convention, San Francisco, 1992, preprint 3431. Available from the Audio Engineering Society: Tel: (212) 661-2355. This paper provides a wealth of detail about the development of the Dvorak's prototype. Note that production versions of the speaker contain several important refinements, particularly in the crossover slopes and EQ employed.
and a central subwoofer. This system was capable of good dynamics, image specificity, and fine detail, as well as an even midrange/treble tonal balance and decent reproduction of instrumental timbres. But the design suffered from limited image height and a soundstage width restricted to the area between the two satellites. Additionally, no matter how small and dead the enclosure was made, some boxy coloration was inevitable due to resonant energy storage and its subsequent delayed release. Most important, all traditional box speakers radiate low frequencies in an omnidirectional pattern, something that Linkwitz felt produced unacceptable masking and colorations.

Faced with these shortcomings, Siegfried received his second impetus for the Dvorak design in 1986, when he designed a sound-reinforcement speaker for audio-video presentation in a large, highly reverberant gymnasium. In order to improve speech and music intelligibility in this environment, he built a long, vertical line-source dipole consisting of twelve 6" cone drivers with the drive-signals electrically tapered to concentrate high frequencies in the two center drivers of the array. In spite of concrete walls and a large parquet wooden floor, this system produced excellent clarity and speech recognition even in the rear of the gym.

As an experiment, Siegfried then broke these dipole columns into a stereo pair and set them up in his living room. Despite the speaker's skewed frequency response, the sound was surprisingly open and produced outstanding image height and width, as well as a marked reduction in room interactions through the midrange and bass. These findings inspired a major revision in his thinking — away from the semi-point-source monopole designs popular for home playback and toward a moving-coil speaker that would maintain dipole directivity from the midrange through the lowest frequencies. Numerous conversations with acoustician Dr. Brian Elliott, and subsequent work by Elliott on the challenge of building an effective dynamic dipole subwoofer, dovetailed nicely with Siegfried's efforts from the midband upward. The full-range Dvorak began to take shape.

**Dipoles & Monopoles**

In order to better understand the Dvorak, we must examine the basic relationships between panel dipoles, moving-coil box speakers, and the Dvorak's successful combination of the two principles — with a particular emphasis on room/speaker interactions. (Note: The attributes and limitations detailed below are relative comparisons between the various major speaker types I'm familiar with, rather than judgments rendered against an absolute yardstick.)

We are still a long way from the perfect transducer. All sorts of complex intermodulation and harmonic distortions still exist which — along with limitations in driver technology, diffraction problems, crossover-related dispersion anomalies, and speaker-room interactions — plague even our most advanced designs. Not to mention the drawbacks of two-channel stereo. Please keep this in mind when interpreting the following comments.

Although a thorough examination of room acoustics is beyond the scope of this article, I'll be referring often to three fundamental interactions that each play a large role in what we actually hear from every speaker design: 1) Room resonances typically affect the region below approximately 200Hz and result from standing-wave excitation of room modes. 2) Initial reflections from room boundaries often negatively affect imaging and the resolution of transient detail. 3) Reverberation refers to longer-duration sounds resulting from cumulative reflections, and affects timbre principally above 200Hz. Let's look first at how these phenomena impact dipoles.

**Dipole Basics:** A dipole can be modeled as two independent point-source transducers separated by a gap measured between the front and rear center of the transducer, including the width and depth of any baffle. The two sources radiate opposite-polarity but equal-amplitude soundwaves, giving rise to a moderately directional "figure-8" dispersion pattern.

Some of the earliest known speakers were dipoles; by the mid-'80s several companies were producing large-panel dipole designs, many of which were, and still are, considered among the best transducers in the world. The midrange performance of the Quad ESL-63, for example, closely matched Siegfried's expectations in terms of transient response, timbral purity, and transparency.

However, using a large panel to implement a dipole radiation pattern is fraught with limitations: curtailed dynamic impact, the difficulty in achieving realistic bass reproduction, and the critical nature of speaker-placement requirements in order to achieve acceptably low levels of higher-frequency colorations. In addition, many such designs present a tough, reactive load to the amplifier. Large panels can also visually dominate a listening room, making their acceptance more challenging for the less audio-inclined members of a household.

Unfortunately, since almost all dipole speakers are also planars, the inherent positive attributes of dipole radiation are often mistakenly credited as being unique to panel speakers, while the negative characteristics that stem from the use of a physically large transducer are often falsely blamed on the dipole con-
The following “visual aids” illustrate how the Dvorak’s radiation pattern differs from that of other major speaker types. Fig.1 shows the polar response patterns of the three major speaker types plus that of the Dvorak-Vivaldi speakers. The diagram is divided into the three main frequency bands to illustrate the consistency, or lack thereof, in the dispersion pattern for each speaker over the full audible band. Note that the shaded areas represent approximate sound pressure level (spl) distribution in the horizontal plane, and don’t reflect changes in dispersion behavior around the transition region between the three frequency bands. Also, the rear wave of the dipole speakers is lightly shaded to denote its negative polarity.

The two most important things to note about the polar response of monopole box speakers (shown on the top row) are the frequency-dependent increase in directivity that changes the forward dispersion from about 250Hz through the midrange and treble, and the spherical radiation pattern in the bass. A common misconception exists that rear-wave radiation is unique to dipole speakers. Fig.1 clearly illustrates that monopoles also have a very prominent rear-wave spanning the lower frequencies, but with the same polarity as the front. It’s this change in directivity from omnidirectional in the bass to unidirectional in the higher bands that causes alteration in the overall sonic illumination of the listening room, emphasizing the bass region.

The second row of images shows the response of a bipolar speaker. As you can see, it has the same spherical bass-radiation pattern and low-frequency standing-wave problems as the monopole box designs, but the midrange and treble dispersions are fairly uniform, illuminating the room more evenly over a wide range of frequencies. However, the bipolar pattern still produces high levels of in-room reverberant energy.

The third group of images highlights planar dipole speakers. With a given on-axis spl, note the significantly lower levels of sound radiated to other parts of the room from all three frequency bands when compared to the other designs. Plus, the rear wave has reversed polarity, resulting in less low-frequency reinforcement. On the down side, the dispersion pattern becomes increasingly ragged at higher frequencies. These off-axis irregularities can generate overt colorations, degrade image quality, and increase speaker placement sensitivity. Fortunately, no radiation occurs 90° off-axis, reducing side-wall and ceiling reflections and lowering the strength of the overall reverberant field.

The final row illustrates how the Audio Artistry dipoles maintain a consistent dispersion pattern through the bass and midrange frequencies. This uniform dipolar directional radiation, particularly unusual in a subwoofer, minimizes bass reinforcement and standing-wave excitation. In addition, the increasingly directional radiation in the midrange and treble reduces overall reverberant energy.

Perhaps it will help to understand how dipole radiation reduces low-frequency room interactions if we imagine a pair of hypothetical Dvorak main panels in proximity to the nearest rear wall, side wall, and corner on one side of a room (fig.2). (For clarity, I'll ignore the effects of the other boundaries.)

The left and right dipole panels are labeled “L” and “R,” and the listener position is at point A. If we substitute the rear and side walls with an imaginary mirror, a number of “phantom” image sound sources are created. Note that the dipole’s positive- and negative-polarity lobes switch positions in the phantom sources. The negative lobes from the phantom sources representing the rear wall and corner tend to combine with the forward lobe of the actual speaker, resulting in cancellation or attenuation. Reflections from the side wall behave more like a traditional monopole except that the off-axis reflections are significantly reduced in amplitude, even nulling at 90°. Notice, too, that the nulled axis of the side-wall phantom speaker is aimed toward the listener. It’s this mechanism that helps reduce the reverberant field level and the amount of side-wall (and ceiling) reflections focused toward him or her.

![Fig.1 Typical loudspeaker polar patterns.](image-url)
Referring back to fig.1, if you replace the dipole with a monopole, it should be easy to visualize how the omnidirectional, common-polarity reflections from all surfaces combine with the direct sound, reinforcing the bass.

Fig.3 illustrates the effect of reducing the overall reverberant energy relative to the direct on-axis sound-pressure level experienced by the listener with either a dipole or monopole. In the case of a dipole, you could sit 73% farther away from the speaker than with a typical monopole or bipolar speaker before the direct and reverberant fields blended! Consequently, while some acoustic treatment is still a good idea, you'll generally need less with dipoles than with box speakers.

—Shannon Dickson

The best panel speakers share a number of positive qualities to greater or lesser degree: a crystal-clear and timbrally pure midrange, a freedom from boxy colorations, excellent transient response, and the ability to convey realistic image size. Dipoles also differ markedly from monopoles in a moderately directional radiation pattern over their effective bandwidth, and a reduction of low-frequency in-room reinforcement.

However, linear excursion capability is not among the intrinsic attributes of panel drive-units. Dipole panels that attempt to reproduce genuine bass require a very large transducer in order to move sufficient air; even then, the results aren't always satisfactory.

This need to move large amounts of air to reproduce the low-frequency foundation of music with convincing volume, dynamics, and definition is the fundamental problem with panel speakers. An unequalized dipole's response rolls off with decreasing frequency as the two opposite-polarity soundwaves increasingly cancel each other at frequencies where their separating path length is short compared to the radiated wavelengths. Progressively larger excursion is required, therefore, to maintain a constant sound-pressure level as the frequency drops. For example, for a dipole driver of any given size to generate a 50Hz tone at the same volume at the listening position as a 500Hz tone requires 1000 times the excursion.

Compare this to the performance of a conventional monopole woofer, which needs only 100 times the excursion to maintain the same volume at 50Hz as at 500Hz, and it's easy to see why dipoles put such serious demands on driver quality at their operating extremes. This limitation has given rise to many hybrid designs using conventional woofers to reproduce bass — with varying degrees of success. Yet taking this course means sacrificing the genuine dipole advantage of low-frequency directionality.

On the opposite end of the spectrum, panel transducers large enough to provide reasonable bass extension typically create a serious compromise in upper-midrange and treble reproduction. All speakers become more directional at higher frequencies, because the radiating area (including the driver and baffle dimensions) becomes equal to, then progressively larger than, the wavelengths.
of the sound. When the ratio of driver size to wavelength increases beyond a certain point, multiple lobes form in the radiation pattern, producing an uneven off-axis response (see polar-pattern diagrams in sidebar). Reflections from these irregular soundwaves can blend with the speaker's direct sound, adding coloration. The beamy treble also forces the listener to sit with his or her head in a virtual vise to get decent imaging.

These problems are potentially significant, considering the large radiating areas featured by many traditional dipole designs. Manufacturers like Martin-Logan, Sound-Lab, Magnepan, and Quad have developed clever partitioning schemes to minimize treble beaming and off-axis colorations in their designs. Nevertheless, these dispersion problems still exist to some degree with panel speakers.

Despite these very real limitations, the communicative powers of the best panel diptes can be so stunning that their flaws are accepted, or at least overlooked. Once you've heard how such designs can portray music's scale and clarity, it's hard to do without it.

Moving-Coil Basics: Moving-coil box speakers dominate both high-end and consumer audio sales; the best examples are viewed as real-world benchmarks of excellence. However, no matter how well full-range moving-coils perform in an anechoic chamber — or a huge ballroom at a trade show — they're usually bought for use in moderate- to normalized living rooms.

When these speakers reproduce music with wavelengths significantly larger than their radiating surface and baffle dimensions, they radiate equally in all directions and excite many of the room's resonances. Since a wavelength of 50Hz extends approximately 22.5' and 20Hz is equivalent to 56.5', the drivers and cabinets of even the largest box speakers are tiny by comparison. As a result, all music below roughly 250Hz radiates from monopole woofers as omnidirectional, spherical soundwaves which then reflect off all adjacent boundaries in the listening room. As the wavelengths of these spherical soundwaves are generally larger than the distance from the speaker to the nearest boundaries, the reflections combine in-phase with the direct sound, resulting in a broad band of low-frequency reinforcement, the so-called "room gain."

In the worse case, up to 9dB can be added to the natural volume level in the bass, with peak-to-peak differences of around 20dB between the nodes and anti-nodes of specific room resonances! In practice, the actual frequencies, and the degree to which reinforcement or standing-wave excitation takes place, will depend on the speaker's low-frequency response, the specific absorption characteristics and dimensions of the room (including acoustic treatments), and where the speaker is placed with respect to the nearest corner and room boundaries.

The sonic result is often an unnatural fullness or, in severe cases, a turgid or boated "one-note" character to low-frequency reproduction that obscures low-level detail and adds coloration clear up to the midrange. When this excess bass energy is combined with high levels of broadband reverberant energy, often generated by cumulative reflections from monopole midrange drivers, overall resolution and dynamic contrast suffers. Omnidirectional bass can also skew the overall tonal balance of a recording because it conflicts with the increasingly directional dispersion of a speaker's midrange and treble.

Such problems may be lessened somewhat by careful low-frequency design and intelligent application of acoustic treatments. Use of room-placement computer programs — such as Virtual Ears, described by JA in this issue's "Industry Update" — or a load of educated trial and error, can also be of real help in reducing the amplitude of resonances excited by a conventional speaker. Those audiophiles who have taken the time to optimize speaker placement for a given room have no doubts about the importance this offers for increased sonic realism. However, even under near-ideal circumstances, genuine bass extension from a monopole speaker in an averaged-size room can pose a significant barrier, curtailing the resolution of natural timbres and low-level decay that are captured on good recordings.

THE DVORAK

The fundamental limitations faced by both dynamic box speakers and large planar designs underscore why Siegfried Linkwitz has spent the past nine years designing a speaker that attempts to minimize the weaknesses of both while building on the strengths of each.

Main Panels: During its years of development, the Dvorak underwent several iterations before maturing to its current five-piece configuration of two main panels, two subwoofers, and an active crossover/ equalizer. While the overall panel is 56° high, the speaker proper consists of a folded MDF baffle measuring 26.5" H by 12" W by 4" D. This is supported about 20" above the base by a structural spine and two side legs running from top to bottom. These legs serve double duty as the folded portion of the baffle. On the rear of the main panel, three narrow horizontal boards complete the folded portion of the baffle. The rear spine, folded sides, and horizontal structural supports are all made from rigid Baltic Birch. A full-length black Crimpline cloth covers the entire structure, and an Avonite top-piece puts the finishing touch on an appearance that's reminiscent either of a small Acoustar or a large RoomTone.

The folded sides of the baffle serve to minimize the frontal width of the panel, reducing edge diffraction while achieving the desired separation between the positive-polarity, forward-firing wave and the negative-polarity, rear-firing wave. Both Marshall and Siegfried emphasized that the precise shape and construction of the Dvorak's baffle were critical for maintaining uniform directivity and consistent dispersion characteristics across the frequency region where the transition between dipole and quasi-dipole/monopole radiation occurs.

Though free from typical cabinet resonances, the baffle does vibrate a little. However, as for the most part these vibrations also radiate in dipole fashion, Siegfried feels that effective cancellation of the front and back waves minimizes any audibility. Though the main panel is fairly rigid, I did notice a very subtle increase in focus by loading the rear of each base with the optional, $150/pair "Top Hat" — a black rectangular box filled with a 25-lb bag of lead shot.

Two Vifa 8" cone drivers are clamped in place on the baffle by the rear spine (no screws are used). These form a symmetrical array by being mounted above and below a 1" aluminum-dome tweeter, also from Vifa, which stands 41.5" from the floor. This tweeter is found in a number of well-respected high-end speakers, and was chosen for the Dvorak because of its excellent room response and power-handling capability around the rather low crossover point of 2kHz. Use of a dome tweeter means that the moderately directional radiation pattern of the dipole midrange-units and woofers is maintained through the treble — save the rear wave — but with a uniform forward dispersion characteristic in lieu of the narrow, "hot-spot" beaming common with traditional dipoles. As a result, the speaker should avoid the placement sensitivity and off-axis color-
ations typical of some panel designs.

The dipole drivers cover a range of 40Hz to 2kHz when operated full-range without the optional subwoofers. With the subwoofers, the active crossover rolls-off the 8" drivers at a more comfortable 100Hz. In addition, a soft absorbent material placed in the shallow cavity between these drivers and the grillecloth covering the back of the speaker partially absorbs and attenuates the upper-midrange portion of the rear wave. This helps achieve a smooth transition to the tweeter's forward-firing radiation pattern. (Linkwitz found dipole operation in the treble not beneficial, as it degrades overall tonal quality, produces high-frequency "splatter," and makes precise speaker placement more tricky.)

Driver selection is a critical feature in any speaker's performance, but particularly so for a dynamic dipole design. Without the assistance of an enclosure's loading properties, dipole radiation demands large excursion capabilities from a driver over portions of its frequency band as well as good power handling, inherently low distortion, and smooth cone break-up characteristics near the edge of its performance envelope. Excessive excursion can produce higher levels of inductive modulation distortion, degrading sonic clarity. By employing two 8" dipole drivers per channel instead of just one, more-than-adequate volume levels are possible in a normal-sized room without inordinate excursion. Interestingly, even though they excelled in some performance areas, some of the more exotic high-ticket drivers evaluated by Audio Amtrity didn't pass the grade for dipole use due to unacceptably high distortion when pressed near their operating limits.

At the bottom of each main panel an 11" by 6" MDF board is braced vertically between the outside legs, further stiffening the structure against torsional vibration. This board also carries the passive crossover components, including Solen polypropylene capacitors, air-core inductors, and Caddock power resistors. The crossover is a 4th-order Linkwitz-Riley, with electrical compensation provided to minimize the time delay resulting from the physical offset of the drivers. Although the crossover point is a low 2kHz, the steep 24dB/octave filter slope makes life much easier on the tweeter. It also minimizes the consequences of any cone break-up artifacts produced when the 8" drivers are driven hard. A rigid aluminum plate on the lower portion of the center spine directly adjacent to the crossover contains two sets of gold-plated, multi-way binding posts to facilitate bi-wiring.

Dipole Subwoofers: The Dvorak's main panels sound fine when used alone in a small room, offering good dynamics and the essential open perspective of the full system. However, I strongly encourage adding the stereo subwoofers even if your room is not large. A black grillecloth encircles the subwoofer enclosure, but the side-panels are made of solid MDF. The cabinet is coupled to the floor with adjustable spikes threaded into a 2"-thick plinth. A black Avonite top matches that of the main panel. Each subwoofer contains two long-throw 12" woofers, each with a free-air resonance of 18Hz. By using equalization to flatten the natural dipole rolloff, you can get LF extension with adequate power through the full audible range.

The top woofer faces forward, the bottom woofer rearward. Both radiate sound in a dipole pattern. In order to reduce the overall width of the subwoofer cabinet, the drivers are mounted on angled baffles, one atop the other and criss-crossing at 45°, and separated by a horizontal board that runs through the center of the enclosure. The dimensions of the enclosure, as well as of the space between the driver cones and the cabinet openings, are calculated to enhance the drive-unit sensitivity. The potential cavity resonance formed by the internal space is much higher than the 100Hz maximum frequency the subwoofer is intended to reproduce, so it should not create a problem.

A pair of gold-plated binding posts attached to the lower rear of the cabinet connect the amplifier to the big woofers. This doesn't waste amplifier power in a passive crossover. In addition, the amplifier directly damps the woofers, providing superb control. A 50Wpc amplifier is more than sufficient to use with the Dvorak's subwoofers, as it only takes about 25W to drive the big woofers to their peak excursion.

Active Crossover: Even if you don't purchase the Dvorak's optional dipole subwoofers, the external active crossover/eqalizer is employed to extend the low-frequency rolloff of the main panels to 40Hz. With the subwoofers in the system, however, the crossover between the main panels and the big woofers is set to 100Hz. This significantly reduces the excursion demands on the 8" drivers, allowing them to operate in a more linear fashion. Specific equalization is also applied to both the feed to the main-panel amplifier and that for the subwoofer. This equalization compensates for the natural dipole 6dB/octave rolloff below 100Hz for the subwoofer's 12" drivers, and above 100Hz for the rolloff of the 8" drivers. (This rolloff occurs for all frequencies where a half-wavelength is greater than the separation between the center of the front and rear radiating elements.)

The active crossover is contained in a black sheetmetal enclosure. A blue LED shines from a ½"-thick, black-anodized aluminum faceplate. One input and two output RCA jacks per channel are mounted on its rear panel. Pushbutton switches allow each main panel and subwoofer to be turned on or off independently. If you don't buy the subwoofers, you simply turn the crossover's woofer circuit off and connect the pair of main outputs to a single stereo amplifier. Otherwise, two stereo amplifiers are used.

There is also a separate woofer-level adjustment control knob for each channel. These potentiometers provide a 12dB range to precisely match the system's bass response to a given room and/or balance any inherent level differences between the two amplifiers — should there be a difference. A front-mounted "video" button prevents the subwoofers from bottoming-out when playing the occasional excessive soundtrack explosion by adding a gentle, 6dB/octave high-pass attenuation from around 50Hz downward.

Inside the active crossover a single circuit board occupies the chassis' full width and more than half its depth. This board contains an additional ±12dB bass-level switch that, along with the external woofer-attenuation knob, provides as much flexibility as one could ask for in optimizing low-frequency performance. While the design of the electronic crossover is clean and straightforward, the Dvorak is built to a relatively affordable price point, so you won't find a "Who's Who" list of audio-ophile-approved passive parts. On the other hand, circuit design — by far the most important consideration in determining overall performance of electronic gear — is well executed, and the parts used in the Dvorak crossover are of good quality.

Inputs and outputs are AC-coupled using polypropylene capacitors. Along with 1% metal-film resistors, the same type of caps are used to implement the
filter and EQ circuits. Four op-amps are used for each channel, these the excellent Burr-Brown OPA-2604. Burr-Brown dedicates a whole page of their data sheet to a description of the special sonic qualities of this modern FET-input op-amp—an unusual step for a mainstream semiconductor company. The OPA-2604 is used with carefully optimized support circuitry in some of the best-sounding high-end gear in today's market, such as the Mark Levinson No.385 preamp.

Audio Artistry has developed an ultra-quiet balanced crossover to accommodate their new flagship Bee-thoven speaker. A revised version of the crossover for the Dvorak incorporating some of the same refinements will likely follow in the near future. One of the nice things about an external active crossover is how much easier it is to upgrade: you don't have to send the entire speaker back to the factory to take advantage of inevitable progress.

The 180mA, ±12V "wall-wart" power supply shipped with the Dvorak's crossover was selected to keep the speaker affordable and to avoid hassles when exporting the system to foreign markets, to not to provide ultimate performance. Alternative power supplies are available that may provide some subtle refinements, yet the stock supply is certainly adequate. Also, keep in mind that the sonic impressions rendered in this review were based largely on the stock supply.

With a retail price of $5990 for the entire five-piece system, the Dvorak is reasonably priced. (The Dvorak subwoofers are also available with an unequalized version of the crossover for use with other speakers that could use the benefits of dipole bass. Price: $3590.)

**SETUP**

The Dvoraks may be less sensitive to room placement than panel dipoles and most box speakers, but some care and experimentation will certainly pay off. I recommend placing the speakers at least 3' to 4' from the back wall, and a minimum of 2' from the side walls. Toe-in the main panels so that the tweeters are nearly on-axis with your ears, then place the two subwoofer cabinets slightly in front and on the outer side of each main panel so that the center point of each subwoofer cabinet is the same distance as the nearest tweeter from your respective ear.

This time-aligns the woofer voicecoils with those in the main panels with respect to your ears. You can experiment by sliding the woofers along an imaginary arc that connects the center of the two cabinets and intersects the tweeters in both panels. The ideal spot for each will vary with your room's dimensions and your sonic preferences. If you have the space, try a tweeter-to-tweeter spread of 8' or more. And be sure to carefully level the panels from left to right and from front to back.

Those who use speaker-placement software or formulas for smoothing the bass response in a given room should keep in mind that, where an omnidirectional woofer will give its smoothest response when located at the nodes of a room's modal profile, a dipole is just the opposite with respect to the front-to-back axial modes. The relationship of side-wall and ceiling axial modes is similar for the two types, but because dipoles have a null at 90°, less off-axis interaction will occur in these two planes, particularly if the speakers are at least a couple of feet from the walls. Therefore, if you wish to further smooth the Dvorak's bass response, try placing the panels and subs in the anti-node nearest the node you would normally choose to place a box speaker.

Whether the final woofer placement is nearer the panels or the side walls, I do suggest you toe them in a bit as well —though not necessarily on-axis like the main panels. Some degree of toe-in, however, will give you increased focus from the directional bass. It's also possible to move your listening position much farther back than you would with most box speakers and still get good imaging. This is due to the reduced amplitude of the overall reverberant field and the weak side-wall/ceiling reflections which, in turn, expand the "near-field" response window compared with a monopole.

Watch the woofer level: Though the marriage between the dipole woofers and main panels is seamless, as the balance is partially in the hands of the user, the flexibility afforded by the wide range of bass-level adjustments makes defining a specific sonic character for the Dvorak's bass and midrange response difficult. The most common mistake people make with the speaker is to turn the woofer levels up too high —they misinterpret the resultant thumping quality as "good" bass. Don't do it! The owner's manual gives a thorough guideline for dialing-in the woofers for your particular room and associated amplifiers, so I'll just highlight a few tips. It's not difficult to do, but it does take a little time and is best accomplished with the help of a friend.

When following the woofer-adjustment instructions, pay attention to the timbre or tonal character. If the balance gets leaner with the woofers in the circuit, turn the level up on the crossover. Be careful, because adjusting the level knob by one "hour" changes the bass level by 1.2dB; even a small step in low-frequency output can produce a surprisingly big sonic change.

If the sound becomes thicker, more "rubby," with the woofers on, turn it down. With the bass levels set too high, dynamics are curtailed, midrange focus and definition degraded, kick drums will sound as if the drumskins are damped with pillows, and bass guitars can sound like someone's playing with leather gloves on.

When you've got it right, the system's overall tonal balance should be the same with or without the woofers engaged. However, with the subwoofers, the midrange has greater presence, the focus improves, and the soundstage is better defined. The effect can be awe-inspiring: bass is conveyed with a correct mix of transient snap and weight while improving resolution of midrange harmonics. In addition, you simply cannot hear the woofers as a discrete sound source. I've found that the final woofer-level adjustment will range between 11:00am and 1:30pm for most average-sized rooms when both amplifiers have the same amount of gain. The best setting may differ in larger or smaller rooms or when dissimilar amps are used.

**THE BIG PICTURE**

The Dvorak is the first truly full-range speaker I know of that appears to maintain a moderately directional radiation pattern throughout the entire audible bandwidth, yet whose radiating surfaces are relatively small compared to the wavelengths they produce from 20Hz all the way up through the treble. As a result, the dominant signature of the listening room is reduced by an unprecedented amount in a dynamic speaker, allowing the listener to experience a literal wealth of low-level detail, textural purity, and natural timbres. One of the principal reasons for this outstanding expressiveness is that the Dvoraks fill a listening room with two-thirds less reverberant energy for a given on-axis volume level compared to a pair of conventional box speakers! In other words, substantially more sound is focused toward the listener and less is radiated to other areas of the room. By the way, the Gradient Revolution shares some of these characteristics, as does the Quad
ESL-63 when partnered with the Gradient SW-63 — another dynamic dipole subwoofer — but neither are true full-range designs.3

My usual listening experience was transformed to a perspective I found more natural and engaging than that produced by any other speaker I've heard at length — to date, that is. I'm not claiming that the Dvorak is superior to all other speakers — it's not. But it demonstrates that by applying known principles in a novel manner, several serious limitations that are consciously (or perhaps subconsciously) taken for granted can be dramatically reduced. I also feel that the Dvorak's fundamentally more natural presentation is more important than many of the desirable sonic attributes on the typical audiophile checklist, even though the speaker does perform well when assessed by these more traditional standards.

The Dvorak also illustrates an interesting paradox I've noticed with other outstanding components. A product that combines a special blend of attributes that improve overall fidelity, rather than just providing specific sonic changes or enhancements, seems to get out of the way of the performance. Such components not only are more resolving but allow the listener to more easily separate uncorrelated distortions and anomalies from the music, making them far less distracting. With other gear that lacks these special qualities, but is still considered revealing, irregularities either embedded in the recording or generated elsewhere along the reproduction chain normally bother the listener more because they are intertwined with the music.

I've also seen an interesting array of reactions from various people after their first exposure to the Dvoraks. While nearly everyone noticed their captivating viewpoint from the outset, a couple of audiophile friends felt a little puzzled after the first session with the speakers — almost as if something were missing. They were missing the "room." The contribution of a room's reverberant field and standing waves is so ingrained in our experience of reproduced music that many of us take it for granted, however much we may acknowledge its impact intellectually.

This is an important point, and one common to many areas of subjective experience. A loose analogy can be drawn comparing the various distortions heard with LP playback: in addition to its numerous inherent positive attributes, many of us have learned to prefer the LP through years of acclimation. Accordingly, constant listening to speakers with omnidirectional bass can lead to a conditioned preference for overpowering but dynamically constricted bass impact, or excessive low-frequency "slam" that is neither on the recording nor representative of the real thing. Once the Dvoraks were placed in my system, I went through a few days of adjustment as the lack of low-frequency "room compression" I'd become accustomed to all these years was replaced with an open, effortless, and full-bodied bass reproduction.

THE DVORAK DIFFERENCE

Right from the start, the Dvorak's startling dynamics of voices and instruments was apparent, as was an alluring resolution of low-frequency ambient information and subtle textural detail (which I surmise) is normally masked in my room. Surprisingly, the most pronounced effect of the clean bass performance was greater clarity and presence throughout the midrange. With the bass as extended, tactile, and well-integrated with the rest of the spectrum as it was with these speakers, even ordinary recordings became more interesting, more involving.

With the Dvorak's better perceived dynamic contrast, correct playback volumes of my favorite recordings varied over a wider range. Fine gradations in volume setting were more easily appreciated, making me value all the more the Rowland Coherence preamp's remote control and awesome transparency. Though the midrange perspective reminded me of the Quad 63's, with the Dvorak this desirable quality extended all the way down through the subterranean foundation of music. It's difficult to overestimate how important open, articulate deep-bass reproduction is in allowing your mind to suspend its disbelief and become engrossed in the music when devoid of the typical veiling colorations and overhang from resonant artifacts.

In particular, I noticed two important qualities that define this characteristic. First, the room doesn't take off on its own when its resonances are excited. While this room "compression" can make the impact of large crescendos or high-intensity transients seem visceral, certainly increasing the "Wow!" factor, much of its impact comes from reverberation and resonant feedback rather than from the direct natural energy of the music. Dynamic contrast becomes restricted, analogous to the way in which electronically compressed music allows a loud but shallow range of expression.

Subjectively, this room distortion feels as if the sound is pressing in on you from all sides during a high-level transient. By contrast, the Dvoraks allow you to hear the swing from quiet to very loud and back with remarkable fidelity. Listening to well-made LPs like The Fantasy Film World of Bernard Herrmann (Mobile Fidelity MFSL 1-240), I had the sense of sharing the recording's original acoustic environment. A musical swell or crescendo would extend from the soundstage and envelop me without the artificial pressure from excessive room-mode excitation. Be forewarned: Unless you have a very large room, it's difficult to go back to traditional speakers, even those of outstanding design, after adapting to the Dvorak's realistic and appealing presentation.

Second, because of the reduced amount of resonant overhang and lower overall reverberant energy in the room, the decay of musical passages and notes is simply more lifelike. Fine nuances and ambient cues normally buried in the room's noise floor are revealed. The ability of these speakers to clearly distinguish various recording styles is remarkable. Microphone types and arrangement, as well as the quality of multitrack mixing and relative distances between elements within a naturally recorded soundfield, are more easily delineated with the Dvorak than when it is overshadowed by room compression. Even with well-known recordings, I'm still surprised by the wide-band low-level resolution that was swamped by acoustic compression with other excellent speakers in my 17' by 23' by 8' room.

The combination of these two major attributes produces the Dvorak's open-sounding perspective. With the right material, boundaries really did seem to disappear, allowing the acoustic soundscape to permeate the room and sonic images to pass right through the speakers rather than bend around them. The Dvoraks convey the scale, intensity, and presence of a real piano, tenor sax, or lead vocalist better than any speaker I've heard. One listen to Johnny Hartman's elixir-like voice on John Coltrane and Johnny Hartman (Impulse! AS-40, reissue GR-157), and I suspect it will be "ease closed" — these speakers portray voices

3 A few other companies offer dynamic dipole speakers. Genesis has the models V and VI, Legacy has their Whisper, and the granddaddies of them all are the Celestion System 6000 and the Enigma panel subwoofer. —JA

Stereophile, April 1996
so beautifully!

I've heard outstanding moving-coil speakers that can focus images like nobody's business, defining pinpoint, almost holographically defined instruments in width and depth. However, before I auditioned the Dvoraks, I'd yet to hear one that could also convey the height of instruments, musicians, or the recorded ambient environment in proper proportion to the other two planes. By "proper proportion" I'm referring not only to the dimensional aspects of an acoustic image, but also to the intensity or "body" with which it is projected. With the Dvoraks, the listener seems to breathe the same air as the performers: It's as if the space between your chair, the side walls, and the rear boundary of the recording venue were illuminated with a vibrant, real-time presence. Listening just now to Classic Records' awesome new 45rpm re-issuse of Mussorgsky's Pictures at an Exhibition (RCA LSC-2201), I felt as if I'd been shot with a stun gun on my way through the Great Gate of Kiev.

In light of the total experience conveyed by the Dvoraks, the slightly skewed perspective of less-open-sounding but otherwise excellent moving-coil speakers always reminded me that I was listening to a loudspeaker — no matter how precise, beautiful, and engaging their timbres and tonal balance, or how sharply defined their imaging. Without the usual, more obvious box-speaker distortions induced by the cabinet and air-cavity resonances radiating back through the drivers, the "character" of the Dvorak’s sound is dominated by a seamless soundscape populated with full-bodied imaging. The presentation of the Dvoraks is closer to the live experience than that of speakers that can carve perfect sonic outlines within a multilayered soundscape but lack the Audio Artistry's sense of scale and presence. Several electrostatic and magnetic planar models can get image scale largely right, and do so with excellent transparency and clarity. However, I've yet to hear one of these models that also possesses the dynamic contrast, natural timbre, and low-frequency authority of which the Dvoraks are capable.

Another major plus that stems from the Dvorak's diminished room excitation is how "apartment-friendly" this full-range speaker is. You can rock out with +90dB levels at your listening chair, yet the walls vibrate far less than with a full-range box speaker. While standing in the hallway outside the closed door of my apartment, I could just discern that music was playing with Dean Peere's bass-guitar tone poem Umos (Redstone RR-9102) blasting at high volume!

**Characteristics & Caveats**

Now that I've shared my impressions of the Dvorak's most prominent qualities, it's worth looking at several other distinguishing characteristics and a few areas for possible improvement.

The Dvorak's upper-midrange and treble performance, though slightly shy of the state of the art, is competitive with many of the most respected high-end designs. In the past, I've been particularly sensitive to the hardiness typical of some metal-dome designs. Fortunately, the Dvoraks join a growing list of high-quality speakers that prove that modern aluminum and titanium tweeters, when mated to good crossovers and associated components, can fill the bill in fine fashion. I noticed no distracting high-frequency anomalies, and the tweeter sounded relatively smooth and extended — though, as I implied earlier, I've heard a few very expensive designs with a shade more treble transparency and fine inner focus.

The Dvorak's treble "flavor" leaned more toward "clear and detailed" than "warm and sweet." Treble artifacts arising elsewhere in the recording or playback chain may become apparent. If you have a moving-coil cartridge with a rising top end, for example, or an edgy-sounding CD player, the Dvorak will let you know it, but without the bite or glare heard from tweeters and crossovers of lower quality. With decent source material, I never found the Dvorak's treble fatiguing or harsh in my system. However, like most speakers, it needed a good break-in period; be patient for the first 75 hours or so.

The integration of the Dvorak's 8" drivers with the tweeter and the separate woofers was first-rate — the excellent overall tonal balance and resolution didn't leave me pining for more. But if you run the main panels without the subwoofers, you can hear increased distortion when playing certain high-intensity, low-frequency material. Hence, my recommendation to use the subs, even with smaller rooms.

With the Dvoraks subwoofers you get both quality and extension, but even the four 12" drivers had limits on how loud they could play the lowest frequencies. In most rooms you'll probably get more than adequate levels of the deepest bass found on most recordings. However, there are a small number of

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**Reference System**

I used a wide variety of gear and recordings while evaluating the Dvorak:

Front end: Inmedia RPM-2 turntable and arm with Lyra Da Capo cartridge; Theta Data II transport with Muse Model Two, Theta DS Pro Generation V-A, and Sonic Frontiers SFD-2 Mk.II processors; Rowland's Consumeate phono-stage and Sonic Frontiers' SFP-1 phono-amp.

Amplification: the outstanding Rowland Coherence preamp and two pairs of Model 6 monoblock amplifiers, all battery-powered/transformer-coupled, were my primary references; Sonic Frontiers' SFL-2 and the exciting new Audio Research LS22 provided alternate preamp duties; Ayre V-3 and BEL 1001 Mk.II power amps also proved valuable references.

Comparison Speakers: Avalon Radians.

Cables: digital cables were Cardas AES/EBU, Marigo Apparition Reference, Aural Symphonie Statement, and AudioQuest's Opti-link 2-2T; Cardas Golden Cross and Discovery balanced interconnects were used, as were Cardas Golden 5-C, MIT CVT 770 and 850 Terminator, and TARA Labs RSC Decade speaker cables.

Accessories: A vibraplane or a pair of custom Newport pneumatic platforms isolated my transport and turntable; Townsend Seismic Sinks supported all other gear with DTFeet SH-22 pucks in between; Mike Frederiksen's equipment stands were used, as were Audio Power Industries' reliable 116, 112, and 110 Power Wedges and Power Enhancer. API and Cardas power cords delivered AC to all gear requiring it; ASC Tube 'Traps helped acoustically; a VPI record cleaner; several Bright Star Little Rocks, and some Shakti "Stones" rounded out the field.

—Shannon Dickson
The Dvorak's calculated sensitivity was a little higher than the specification, at 90dB/W/m (B-weighted). The main panel's electrical impedance (fig.1) showed the specified minimum of 3.1 ohms at 2.1kHz; though the magnitude is mainly much higher than this, note the high phase angle in the low treble, which means that the Dvorak will be quite a hard load for an amplifier to drive. In addition, the large variation in magnitude means that the speaker's frequency response will vary significantly if an amplifier with a high output impedance is used. In particular, the entire treble region will be shelved down—a tube amplifier will definitely make the

Dvorak sound sweeter, as long as it is not fazed by the awkward loading between 1kHz and 3kHz.

As there is no cabinet to speak of, the low-frequency peak in fig.1 is not due to the usual box resonance. Rather, it is due to the free-air resonance of the mid/woofers, which appears to lie at 31Hz. The little wrinkle in the traces at 26kHz is due to the metal-dome tweeter's "oil-can" resonance.

Fig.2 shows the dipole subwoofer's impedance magnitude and phase. The peak below 20Hz is due to the drive-units' free-air resonance; the rise in magnitude in the midrange is due to the drivers' voice-coil inductance. But note that there are two strong wrinkles in the traces, one at 1500Hz and one around 180Hz. These will be due to resonances of some kind. While the higher-frequency one is innocuous, the lower-frequency one is less than an octave above the crossover to the main panel—riskymeant business, unless the low-pass crossover filter is very steep-sloped.

The shaped output responses of the Dvorak's electronic crossover are shown in fig.3. The input level was 100mV and the subwoofer level control was set to its maximum position. The subwoofer drive signals, shown to the left of the graph, reveal a combination of cut above...
100Hz and boost below to compensate for the dipole rolloff. The subwoofer drive is down by almost 20dB at the resonance frequency, which should result in minimal excitation of the problem.

The lower crossover curve shows the effect of the "Video" switch: it cuts the boost with eventually a 6dB/octave rate to avoid overloading the drive-units with subsonic explosions.

The main-panel drive signals are shown to the right of fig.3. The signal is increasingly boosted below 300Hz, again to compensate for the speaker's dipole rolloff. With the high-pass crossover switched in (bottom curve), the boost is reduced below 100Hz.

Electrically, the crossover performed well. Its input impedance (at 1kHz) measured just under 20k ohms, while its output impedance from the main outputs was 235 ohms (panel outputs at 1kHz) and 225 ohms (subwoofer outputs at 100Hz). Its insertion loss of 0.4dB will not be significant, and its distortion and noise were both low. Fig.4 shows its overload points: The top trace shows that the panel output at 1kHz clips at an output of 6.2V, equivalent to an input voltage of just over 7V, which is well above the maximum output level of any combination of source components and preamplifier with which the Dvorak will be used. The bottom trace is the subwoofer performance, assessed at 100Hz with the level control full up: The lower distortion level is due to the output's low-pass function, any additional harmonics being rolled-off; the output clipping point (1% THD+N) is 4V, equivalent to an input of 11V, this again well in the safety region. Though the low-frequency boosts applied to both sets of output signals will reduce the clipping margin, this should not be a practical problem.

As Siegfried Linkwitz points out in his interview in this issue, assessing the low-frequency performance of dipole is not easy, due to the usual nearfield techniques failing to allow for the dipole cancellation. For interest's sake, however, fig.5 shows the nearfield output of the Dvorak subwoofer, measured without the crossover/equalizer (top trace) and with the crossover set to normal operation (middle trace) and to "Video" (bottom trace). Without EQ, the subwoofer's natural output extends to above 1kHz. Despite the impedance wrinkle at 180Hz, the highest acoustic output is obtained at 270Hz. Note, however, that this peak is knocked down by 40dB once the EQ is switched in! It should not have any audible effect. Note also that the overall LF boost appears to be very mild, at 3dB or less (the difference between the levels below the 20Hz region with and without EQ). With the "Video" button pressed in, the entire 30-50Hz region is reduced in level by about 5dB, reaching -12dB at 20Hz, significantly reducing the excursio demands on the drive-units.

The individual responses of the main panel's drive-units are shown in fig.6. (Again, note that the woofer's nearfield traces are not representative in that they don't allow for the dipole cancellation.) The acoustic crossover is to spec at 2kHz, with steep, approximately 24dB/octave slopes. The passbands of the mid/woofer and tweeter look impressively flat. However, there does appear to be a little too much overlap between the drive-units to give a perfectly flat summed response through the crossover region. In my experience, the steeper the crossover slopes, the closer the tolerance necessary of the parts used if the actual crossover is not to depart from the target performance.

Note the deep, narrow notch at 24kHz. This is at its most extreme exactly on-axis and is due, I imagine, to the "phase plate" that covers the tweeter dome. The middle trace on the left of fig.6 shows the nearfield response of one of the mid/woofers, while the top trace is the same woofer's output modified by the electronic crossover. Remember, however, that these measurements do not show the rolloff due to the dipole cancellation.

The Dvorak's main-panel overall response, measured on its tweeter axis at a distance of 50° and averaged across a 30° horizontal window, is shown in fig.7. The top audio octave appears to be rolled-off in this graph, partly due to the
tweeter being quite directional in this region. While the midrange and treble regions are otherwise impressively flat, the 1.5-3kHz crossover region is plateau'd up by 2dB. Whether or not this is due to the drive-unit overlap in this region, I could hear it in my own auditioning as a narrow band of brightness. Note also that Shannon did find the Dvorak to sound a little on the analytical side, which is not unexpected given this kind of on-axis balance (though the speaker’s off-axis behavior is also relevant here).

On the left of fig.7 is the same equalized nearfield woofer response as shown in fig.6, plus the same measurement made with the high-pass crossover filter switched-in. To get an idea of the Dvorak panel’s true bass extension, I used noise with a 1kHz bandwidth and measured the speaker’s in-room response at the same 50" distance used to obtain the traces to the right of figs.6 and 7. Plotted on a half-octave-smoothed basis to eliminate some of the major room effects, this is shown as the bottom trace in the graph. The dipole cancellation does appear to cancel almost all the nearfield bass boost. However, there is still a slight energy excess apparent in the lower mid-range. I assume that as SD didn’t remark on any coloration in this region, its effect is benign, particularly as it falls in a spectral region where room effects dominate the perceived balance.

Vertically, while the tweeter’s 41.5" distance from the floor is a little elevated for typical seated ear heights, the Dvorak’s balance remained remarkably even across a wide range of listening heights. As long as the listener sits with his or her ears between the bottom of the bottom mid/woofer (35" from the floor) or the top of the top mid/woofer (51"), there should be no significant changes in balance. Only a standing listener close to the panel will hear a response with a lack of energy in the crossover region.

Horizontally (fig.8), the Dvorak’s output falls relatively evenly with increasing off-axis angle, as expected. In the bottom octave of the tweeter’s bandpass, where the dispersion is at its widest, the output at 90° has fallen significantly more than at 45° off-axis. However, the null at the speaker’s side is less deep than I had anticipated, something that could be heard as well as measured. The front and rear waves do not see sufficiently the same acoustic environments to cancel completely at 90°. According to Siegfried Linkwitz, they cancel at around 110°, and the overall total power output follows the classic dipole characteristic.

In the time domain, the Dvorak panel’s step response (fig.9) indicates that the tweeter and mid/woofers are connected with opposite acoustic polarity. The tweeter’s output is the small, initially negative-going spike of energy at 3.75ms; the woofer’s output is the larger, positive-going triangle of energy immediately after the 4ms mark. As Linkwitz states in his interview, whether such a lack of time coherence is significant or not is not known. However, my experience is that if everything else in a speaker design is right, time coherence adds that last, essential element of image focus.

Finally, the Dvorak’s cumulative spectral-decay plot (fig.10) indicates an initially clean decay, but with some low-level hash present in the mid-treble. This may be resonant behavior; alternatively, and in my view more probably, this is due to low-level early reflections of the sound from the speaker’s structure. Note that the ultrasonic tweeter resonance is down in level in fig.10, which was taken on-axis. The resonance is more noticeable—at least to a microphone—off-axis. —John Atkinson

**SUMMARY THOUGHTS**

After a year of careful listening, my take on the Audio Artistry Dvorak is that it successfully incorporates many of the positive qualities of large panel dipoles and moving-coil designs while minimizing most of their respective drawbacks. In contrast to so many speakers that are simply variations on common themes, the Audio Artistry Dvorak offers a refreshing perspective. With its marked lack of room, cabinet, and air-cavity colorations, its smooth and consistent power response, its natural top-to-bottom tonal balance, and its unforced yet dynamic expressiveness, I felt that I was hearing all that this combination of components could offer. Its wonderful balance of attributes answers the question posed at the beginning of this review—"Does this speaker really possess a unique and compelling communicative skill?"—with a resounding "Yes!" The Dvorak is a genuine music lover’s speaker of the first order.

While the Dvorak scores highly on the typical audiophile sonic checklist, its ability to tie the whole experience together and directly convey the emotional undercurrent of good music made conducting such an analytical assessment seem almost frivolous. Yes, a very few of the many outstanding speakers I have heard at length have a slight performance edge in a few specific areas, but I wouldn’t trade the Dvoraks for any of them for sheer musical enjoyment or long-term reference in a normal-sized room. This includes a number of elite models costing nearly three times the Dvorak’s $5995 price! Given unlimited resources and a cavernous room—well, since I live in an apartment, that’s a moot point.

Those in the market for a full-range loudspeaker for use in rooms under 600ft² in area should make the Audio Artistry Dvorak a top priority on their audition lists, regardless of budget. Those planning on spending much more may be pleasantly surprised, and those with tighter budgets are likely to find themselves justifying "creative financing" alternatives in order to take these babies home. Happy listening! —Shannon Dickson

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**Fig.9 Audio Artistry Dvorak main panel, step response on tweeter axis at 50" (1ms time window, 30kHz bandwidth).**

**Fig.10 Audio Artistry Dvorak main panel, cumulative spectral-decay plot at 50" (0.1ms risetime).**
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Stereophile, April 1996
EMPERORS OF THE AIR

Wes Phillips gets up close to the Aerial Acoustics 10T loudspeaker


Manufacturer: Aerial Acoustics Corporation, P.O. Box B1248, Wellesley Hills, MA 02181. Tel: (617) 235-7715; Fax: (617) 235-7715.

A-SLAM!!! thump thump thump

"Hee, hee, hee!" I cackled maniacally as I listened to Dajos at what I jokingly refer to as a "realistic" volume. The Aerial Acoustics Model 10Ts sounded grand—dynamic and uncolored, and seemingly impervious to the most spectacular transients. And detailed? I was hearing stuff I'd never heard on the disc before.

thump thump thump

Like that muffled thumping. I'd listened to this track literally thousands of times and never noticed it before.

thump thump thump

Actually, it was kind of spastic—it didn't really go with anything else on the track. I walked over to my door and placed my hand on it. Sure enough, the sound was coming from outside. I opened the door a crack, only to see my upstairs neighbor—foam on his lips and toothbrush in hand.

"My God, man! Are you all right? Should I call 911?"

"Whatever for?"

"Didn't a car crash into your apartment? At the least, I must have heard a wall collapse!"

"Nah—I'm just listening to my stereo."

"You mean, you do that for fun?" He stalked back upstairs to finish his ablations.

Well, of course, I thought, as I closed the door. I suppose you'd just listen to music or something.

Not that the 10T is exactly a slouch in the music department. Its transient speed, unbelievable power-handling ability, and total lack of cabinet colorations really brought out the kid in me. I found myself playing many a rude noise just because—like the dog in the joke—I could.

OF, IN, OR CAUSED BY THE AIR

While not yet as well-known as some other high-end firms, Aerial has been quietly manufacturing loudspeakers since 1991 (see sidebar). The top of a product line that also contains the Models 5 and 7, the 10T consists of a ported bass cabinet supporting a cast synthetic-stone midrange/tweeter module that can be rotated independently to better focus the mid and upper frequencies at the listening position. (B&W successfully exploited this concept in their 801 loudspeaker.) The head-unit sports a complex faceted shape: A narrow face, to which the drivers are mounted, flares gradually back to a thicker box; all corners are rounded; and there are no joins visible on the seven exposed surfaces (the bottom plate of the head-unit is cast separately, and literally cemented into position).

The midrange/tweeter module is attached to the bass cabinet by way of a hardened-steel rod, which threads into the bass module and projects upward about 9" or so. The head-unit slips onto this pivot post and attaches electrically to the bass cabinet via two dual-banana jacks. Once attached, the tweeter/midrange module can rotate freely through an arc of about 270°. The Novalith™ material utilized in the 10T's head-unit is about as dense as anything I've ever bruised my knuckles against; only a masochist would repeat the tape test with any part of his or her own hand. The woofer cabinet is pretty darn nonresonant—constructed of MDF in thicknesses varying from 1" to 2"—but it ain't a patch on that head-unit.

The bi-wirable 10T has two pairs of high-quality five-way binding posts at the bottom of the woofer cabinet, and the 2.5"-diameter port fires to the rear. The cabinet has four nylon pad-type feet and comes with hardened-steel spikes. A 6'-tall, sand-filled, spiked stand is available as an option. According to designer Michael Kelly, "In practice, the 10T sounds better with the stand about 90% of the time—especially if the floor is supported by wood beams. Using the stand alters the floor-reflection frequency somewhat, but that's an area where the 10T is quite good musically—and an area most dynamics really have a problem with." I used the stand for all of my auditioning. I also removed both pairs of grillecloths.

1 Actually, my favorite variation on that old saw is a Southern version concerning two good ol' boys leafing around on a hot afternoon. Spying a hound-dog meticulously licking its genitals, one turned to the other and exclaimed, "Boy, I wish I could do that!"

His friend looked over at the hound and replied, "I reckon you could, but if I was you, I'd pet him first."
LIVING IN THE AIR

I reviewed the Aerials in my apartment, which has a smallish listening room. This forced me to listen in the nearfield — about 6' in front of the plane of the speakers themselves. The wall 24" behind my listening position was treated with RRG Acoustic fiber. The speakers themselves were 7' apart and 3' from my recording shelves, which meant the wall behind them was heavily damped. The two-part body of the 10Ts made tuning for the nearfield far, easier than it normally would be for a speaker of this size, with such an extended frequency response. Being able to face the woofers straight forward and aim the head-unit at my listening position made a huge difference in achieving driver integration. (Experiment in your own room — I've never found this sort of two-part spread to be as effective in the larger rooms this speaker was intended for.)

My Linn LP12/Naim Armageddon/Naim ARO/Naim Prefix/SuperCAP front-end, fitted with the latest version of Sumiko's Transfiguration cartridge, the Temper, handled analog playback. My digital source was the superb Theta Data Basic II/DS Pro Basic III mag. The LAMM Model L1 preamp and M11 monoblocks shared the same with an Audio Research LS22/VT130SE combination. Cables were Kimber KCAG interconnect and 4AG speaker cable — along with a bi-wired set of Straight Wire Virtuoso Gold speaker cable and Straight Wire Virtuoso Gold balanced cables for the ARC gear. An assortment of accessories also saw duty: Versa Labs Red Roller, Flat Rollers, Ground Block, and Wood Blocks; Audio Power Industries Power Wedge 112; MIT Z-series power cables; Highwire Audio Power Wrap (on components with non-replaceable power cables); Shakti Stones (but not on all components); Bedini Ultra Clarifier, Townshend Seismic Sink (under turntable); 'The Shelf' by Black Diamond Racing (under amps); and Golden Sound DH Cones (under everything but the Linn).

BORNE ABOVE THE GROUND

Get the impression that I found the 10Ts fast and uncolored? Did I ever!

Out of the box, they had those qualities in spades. Of course, as a reviewer, I'm not supposed to listen to stuff out of the box, but they were an unignorable presence in my living room. Heck, listening in the nearfield, they were practically in my face. So while I pumped sound through 'em 24 hours a day for the first week I had 'em, I didn't have the luxury of not listening to them when I was home. Of all of the speakers I've reviewed this year, the Aerials changed the least with break-in. As the surrounds unlimbered, the 10Ts became even more transparent to low-level detail, and responded to the rhythmic ebb and flow of music with greater looey-goosy freedom from constraint — but to be honest, the first hour told the tale.

While attending the 1996 WCES in Las Vegas, I was walking through the Convention Center "Zoo" when I heard some fantastic a cappella emanating from one of the exhibitor's booths — obviously live. Never able to resist live music, I wandered over to find the band Rockapella performing for Samsung. Parents of young children — and freelance writers who routinely practice deadline avoidance — will recognize Rockapella as the "house band" for Where in the World Is Carmen Sandiego? For the rest of you, they are one of the few contemporary a cappella groups that avoid door-wop nostalgia. They perform high-energy material that manifests an unusually sophisticated harmonic sense — and they're a riot in person. Barry Carl, their bass singer, has one of the richest, deepest bass voices you're ever going to hear — think of him as pop music's Sam Ramey. Barry and I used to sell hi-fi together back in the '80s, so we caught up on what was what for a few minutes.

"So Barry," I said. "You're a high-end kind of a guy — did you ever try to record with a 'purist' attitude?"

"Well," (think James Earl Jones here, Luke) "we turn our a microphones at least once per show — if we're in an intimate enough setting — and people go wild. They've never heard anything like it. And [dramatic pause] last summer we recorded an album 'live' in the studio — without recourse to overdubs or 'sweetening.' It was recorded through Cello electronics and mastered on Duntech Crown Princes." About three weeks later, a copy of that disc, Prim, showed up in the mail.

2 Prim shows no label name or number. It's available at Rockapella concerts or from the Primarily A Cappella catalog — (415) 455-8602.

The Aerial 10Ts (remember them?) were fully broken-in by this time, so I slapped that sucka into the Theta. Cueing up an old fave, "Sixty Minute Man" — a song where the bass customarily takes the lead — I was instantly aware of the room in which it had been recorded. Against a background of truly tight harmonics, finer snaps, and some of the most startlingly realistic mouth percussion I've ever heard, Barry took the stage.

Wow! Dynamic and life-sized, he was in my living-room! Really. In a nutshell, this demonstrated a long list of the Aerial's strengths: it was uncolored (I know Barry's voice well); it was fast (those finger snaps); it had exceptional low-level resolution (I could hear the reflections of the finger snaps off the room boundaries and the rapid decay of those reflections); bass was well-articulated, specific, and deep (there was Barry standing behind the power amp); and it was loud (I'd misjudged the gain).

Recordings with which I was intimately acquainted also yielded surprises. Since it came out in 1993, I must've listened to Guy Clark's Boots to Build (Asylum/American Explorer 61442-2) on just about every rig I've had in the house. It's an exceptional recording, and lots of fun. Playing it through the 10Ts, I was struck by how physically present all of the performers were on "Jack of All Trades," one of the best brag-songs I've ever heard. ("There ain't no need to do a job / if I can't do it right / I may not be gettin' rich / but I'm sleepin' good at night. // Some call me a gypsy / some call me a flake / but I'll kiss your ass if I don't earn / every cent I make." I've heard that song 500 times in the last three years — so why was this the first time I realized that Rodney Crowell was singing backup? Dang! I checked the notes — Rodney co-wrote the song, even. Until I heard it through the Aerials, I was just hearing "generic male harmonies" — suddenly it was one specific voice and personality.

Hmmm. Let's pull out another old friend ... ah-hah! Vivaldi recorder concerts by Il Giardino Armonico (Teldec 91852-2). This is early music as death-metal: Vivaldi played at breakneck speed with particular emphasis on dynamic contrast and farfetched modulation. The band has been controversial, but I don't care — I find its Vivaldi thrilling, and those are words I don't normally use in conjunction with one another. The 10Ts lived up to the group's challenge — the music was fast, and it swung hard. Ensemble attacks were rendered with precision, and the band's trademark use of dynamic contrast was particularly well-presented. Giovanni Antonini's recorder sounded sharp and detailed, but not at all shrill. Bazounds! That's a one spicy CD.

David Murray's Shadell's Warrior (Sony/DIW CK 48963) gets a lot of play when I'm trying to assess a system's dynamic and timbral performance. You
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Stereophile, April 1996

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see, I've sat 5' in front of David Murray — he is loud, and the sound is intensely physical. Most systems wimp out long before they've reproduced that tenor sax, squeal and honk at remotely live levels. Plus, Shurkill... boasts the late Don Pullen on Hammond B-3, pulling the drawbars "back to eleven," as JA puts it — especially on "At the Cafe Central," which is, of course, what I always play. (When I played this at Hi-Fi '95, some of the transients had the room lights dimming, or so Richard Rosen maintains.)

Once again, the 10Ts presented the music with all the life intact. Their deep but well-pitch-differentiated bass thrust the song forward in conjunction with Andrew Cyrille's propulsive thrash. Murray played chorus after chorus, taking the melodic line higher and higher into the instrument's upper registers, until the

**Home-Grown**

To get some background information both on Aerial Acoustics and on the 10T, I gave Aerial's Michael Kelly a call. When he had gotten involved in loudspeakers, I asked...

**Michael Kelly:** My BS was in physics; I studied plasma physics at the postgraduate level, but did not complete my doctorate. Then I got involved in audio — I worked for a/d/s/ from 1974 to '86. I was Executive Vice-President in R&D and Manufacturing when I left to go to MIT, where I was a Sloane Fellow...

**Wes Phillips:** Oh, the school, not the cable company!

**Kelly:** [heh-luch] Yes, that's right! That was a wonderful experience — the Sloane Fellowship is a complete, very complete, Masters in Business. After that I did a little bit of design work for Boston Acoustics and B&W. I even put in a stint at dBx.

At a/d/s/, we had started building drive-units in the US. We set up a 45,000 sf manufacturing operation — at our high point, we were building 10,000 drivers a month. I designed a lot of the production machines and I've even got some patents on some of our automotive stuff — the 300i and 320 are my designs.

I was frustrated at being capable of building some really nice stuff, but never being allowed to. That was my motivation for starting Aerial, along with the personal desire to run a company right. I wanted to create a company that offered high performance, but even more importantly, high value — for years and years.

**Phillips:** You started Aerial in 1989?

**Kelly:** Yes, that's about right. David Marshall, my partner, has worked with me for a long time — I hired him at a/d/s/ back in 1975. We're a good team — we're complementary. Dave worked a lot on the crossover and I designed the woofer myself — all of our drivers are custom-built. We worked together on the midrange driver, the cabinet, and the overall concept behind the speaker.

We refined the 10T design for two whole years — working solidly on it, not doing anything else on the side. I didn't want to introduce the 10T until it was a very refined design. I dislike products that are introduced to the public and then fine-tuned in the marketplace over the next year. That's not the way to do things.

We incorporated and started shipping the speakers all at the same time — that was September 1991. We have made some changes since then — our original tweeter was pretty much a stock unit, but we designed our own.

**Phillips:** What's the story with Novalith,™ the cast material you use for the 10Ts head-unit?

**Kelly:** It has the best combination of density and damping that we know of. It's a bear to finish — it's very hard to work. Each of those heads takes about four hours of labor before it can be painted.

But the benefits make it worthwhile. One inch of Novalith is equal to 3" of MDF in terms of energy absorption. That offers you inertness and mass in a very compact shape. Granite is similar to Novalith in density, but it rings like a bell, since it has no internal damping. That's the best thing about Novalith: It's internally damped — chemically.

**Phillips:** Can you say how it's done?

**Kelly:** Well...Novalith is our own solution to that problem, and we've trademarked it. I can say that we weren't really interested in developing a new substance. However, in order to get the rigidity and absorption we wanted around the tweeter and midrange, we were being forced into utilizing 4" of MDF. That's like building an Avalon! Avalon does a fabulously good job of building their cabinets, but they are big and they are very expensive. We wanted to build a speaker with similar performance, but not at that price. We started out by casting some of the thermo-set polyesters — several speaker companies use similar materials: Thiel casts the baffles of the CS5 from something similar, and Wilson uses it in their cabinets.

Novalith is not really in that family of products at all. It's a stone product, with damping components built in. It's denser. If you load it heavily to the point where you just begin to sacrifice material strength for inertness, which we do — you get a material that is marvelously inert. And it can be cast, which allows us to make the head-piece a complex shape, without having any joints to weaken it. The head walls are 2" thick, with the joints internally radius'd to about two and a half inches. We even cast in all the driver details — down to steel sockets for the screws that attach the drivers.

**Phillips:** But you don't use Novalith for the woofer cabinet.

**Kelly:** No, we would love to — that would be very good. We have a wonderful bass cabinet now, but that would be even better. The problem is that the casting tool for the head weighs 200-250 lbs and it needs to be rotated and shaken during the casting — and that's just to produce a head that, if it were made out of wood, would weigh about 5 lbs. Cast from Novalith, it weighs 30 lbs! The bass cabinet weighs about 80 lbs; if it were cast from Novalith, it would weigh 200-300 lbs and the tuning would be... Oh, I don't even know... maybe 1000-2000 lbs. Besides, shipping would be a nightmare. So would setting them up.

The head-unit is the single most expensive component of the 10T — it costs more than the woofer cabinet, even. If we were able to cast the bass cabinet, that speaker couldn't cost as little as the 10T — that's for sure!

We will give you your wish, though. In a couple of years or so we'll come out with a reference-level speaker — the 20T. That'll be fully cast.
melody was buoyed aloft on multiple choruses of overblown squeals and honks. Just when you’d think he couldn’t sustain the balancing trick any longer, he took it over the top—where Pillen brought it all back to earth with a churning B-3 solo. I’ve never heard it better.

**REACHING HIGH INTO THE AIR, LOFTY**

Need I say that the Aerial 10Ts impressed the dickens out of me? They’re among a handful of speakers that seem to have no limit to their ability to kick the tar out of any dynamic challenge you throw at ’em. They seem to have no overhang or blur caused by their cabinets, so they reproduce low-level detail with exceptional clarity. They can also present performers as though they were in the room with you.

I’m not convinced that the 10Ts pre-

Phillips: You custom-finish all of the drivers?

Kelly: They are all custom, yes, and some of them we finish. The midrange is half manufactured by us. I think that drivers should be uniform to begin with—very close to the design reference—only then should you come along and pair-match them.

Once you have a speaker that is wide-band, linear, and natural, slight changes in drivers or network components are extremely audible. Secondary things then become primary things. We hand-finish the midrange in order to assure unit-to-unit variation that is vanishingly small.

The tweeter is new—introduced within the last year. It’s a two-chamber design made in Germany, and it has a very large, egg-shaped secondary chamber designed to have very little acoustic signature. Its vent is flared at both ends. There are five additional vents through the steel in the back plate, and it has the largest surround on any tweeter I know of—which clamps the titanium dome. It doesn’t have the usual metallic quality you get with most domes. It sounds like music, not a tweeter.

The midrange is a twin-cone Kevlar design, made for us by Focal. A layer of aerated epoxy is injected between the two cones, which works like an I-beam. If the cone starts to flex, the inner skin or the outer skin has to stretch in order for that epoxy to bend. One of the most attractive properties of Kevlar is that it won’t stretch—it’ll bend and flex, but it won’t stretch. We get a very dead cone that way.

The woofer is in its second generation too. Vifa assembles it for us in their large production facility. We could do it ourselves, but we’re so small it would cost a lot more. Vifa has come up with a basket superior to our original—mechanically more rigid and not even particularly expensive. We’ve also enlarged the magnet system. The cones are made out of a fibrous coated material, and there’s a solid moat of epoxy under the dustcap—which rigidifies the cone-neck area, making for a mechanically and acoustically sound driver.

We mount the woofer high in the cabinet in order to place it near the midrange acoustically—and also so that the floor-reflection notch would be pretty close to the crossover frequency. It becomes part of the crossover design.

**Phillips: Tell us about the crossover.**

Kelly: Dave did a lot of the crossover—it’s a 24dB/octave, true acoustic Linkwitz-Riley network. We chose it for several simple reasons. First of all, we wanted all the drivers in-phase. If you start there, your only choices are 6dB or 24dB. At 6dB, you end up with audible output from the drivers several octaves above and below the crossover frequencies. This is a problem, because most drivers are only adequate for two to three octaves. A lot of 6dB/octave crossovers are only 6dB for a couple of octaves, and then turn into a much more rapid slope.

We want to only use the centers of the bandwidths of the drivers and then rely on the networks to have repeatable, very controlled rolloffs that are not a function of phase problems or interference from the drivers themselves. It’s a purist approach, and sonically we feel it’s the best.

You can always hear filters, so we don’t use them to smooth out irregularities. We use linear drivers, utilize the center of their bandwidths, and roll them off very precisely with the electrical components of the network—and we only use the finest components to do that.

We use OFC copper throughout, and we use metallized polypropylene—except in some of the very large capacitors in the bass circuit, which are in shunt positions. We use a nickel/steel-core coil in the bass circuit, which only saturates above 1000W and has a very closed hysteresis loop—giving it virtually no footprint on the time axis. That’s one reason the bass is so nice and tight.

If you call resistors elements, we have 27 elements in the crossover. We did a lot of listening before we settled on this design.

**Phillips: I imagine there are people wondering why they’ve never heard of Aerial. Was growing the company slowly a deliberate decision?**

Kelly: Absolutely! One reason I started Aerial was that I had my own ideas about how a company should relate to its customers and what it should offer in the way of real substance. I’d worked for some very large, fairly successful companies, but I longed to do things the way I would want to be treated.

And early on—please don’t take offense at this—I decided that I didn’t want to risk the fate of the company on a magazine review. Obviously, a bad review can kill a small company like us, but a rave review has its own dangers—it can force you to try to expand too rapidly. We’d put so much into the company that it just didn’t make sense to gamble that way. We made the product we wanted to make, and then we built up a dealer network that was small but first-rate. We have great dealers!

We built the company without acquiring any outside debt. We pay our vendors within 10 days, whether or not they require it. We even make a little profit. So we’ve become stable and we’re here for the long haul. We have a fantastic staff. We’ve been lucky that way, and its one of our great strengths.

We’re really a strong little company. Strong enough to say, "Now it’s time for Stereophile to take a look at us."
sent a sense of depth to an exceptional degree, however. Their ability to reproduce low-level detail does delineate the ambience of different acoustics—which I had always assumed was the same thing. Apparently not, as I missed that sense of the soundstage extending well beyond the rear wall of the listening room. It must be noted that I was listening in the extreme nearfield, which probably isn’t ideal for that particular illusion. I move to a house with a much more generous listening room in three weeks, and I intend to set up this particular system as a way of exploring the differences between my present room and that one. I’ll get back to you.

In any case, the tonal balance of the Aerial lends itself to an exciting, immediate presentation. The speaker doesn’t sound sharp, but it does highlight detail in a manner that won’t please fans of the “golden-glow” school of hi-fi. Balancing that, its midrange is as uncolored as any I’ve ever heard, and the integration of lower midrange to upper bass is seamless and natural.

Comparing it to the Metaphor 2 reviewed elsewhere in this issue, I’d have to chose the Aerial at about $500 less per pair—but I’m made intensely uncomfortable by this sort of comparison. Different systems, different strokes, different priorities make it impossible to put an “all things being equal” quietus to this sort of question. But I don’t want to see the last of the Aerial 10Ts—in certain areas (particularly dynamic potential and uncolored immediacy), they’re the equal of any speakers I’ve ever heard. If you’re shopping for speakers—even if your budget allows you to examine speakers costing far more—you’ve got to listen to them.

— Wes Phillips

SUGGESTIVE OF AIR
I measured the Aerial 10T using the DRA Labs MLSSA system (v.10.0A), an Italian Outline speaker turntable, and a B&K 4006 ½” microphone calibrated to be flat on-axis at my typical measuring distances. My estimate of the Aerial’s B-weighted sensitivity was exactly to specification at 86dB/W/m. (My congratulations to the 10T’s designers for not exaggerating this figure, a practice pandemically among the speaker industry, I’ve found.) This respectable figure implies that the speaker will play reasonably loud with an amplifier of around 100W. Its plot of electrical impedance (fig.1), however, reveals that it sucks quite a lot of current from the partnering amplifier to achieve that sensitivity. The magnitude drops to 3 ohms or below in
the midbass and mid-treble, and is coupled with a demanding electrical phase angle some of the time. I wouldn't recommend this speaker be used with wimpy single-ended amplifiers, and tube amplifiers should definitely be used from their 4 ohm transformer taps.

Fig.1 also reveals the tuning of the large port to be at a low 21Hz, this confirmed by fig.2, which shows the individual responses of the 10T's drive-units, measured on the tweeter axis at a distance of 50° (above 300Hz) and in the nearfield (below 300Hz). The port output features a slight resonant mode at 220Hz, but this is well down in level. The woofer crosses over to the midrange at the specified 360Hz, while the tweeter takes over above 2.9kHz. However, I was surprised to see that the acoustic crossover slopes are closer to 12dB/octave, with only the midrange/tweeter filters approaching the specified 24dB/octave. The tweeter's ultrasonic resonance can be seen at 26kHz. This should be inaudible to all but bats and infants. Unusually for a metal-dome design, the unit's output in the 10-20kHz octave doesn't droop.

The 10T's overall response on the tweeter axis is shown in fig.3. It is commendably flat through the midrange and treble, with only a slight rise in the midbass apparent. The bass is well-extended, with a calculated –6dB point of 19Hz.

Vertically, the 10T's response stays basically flat as long as the listener's ears are between the top and bottom of the midrange/tweeter head-unit. Stand up, however, and a deep notch appears at the upper crossover frequency, which will make the speaker sound rather hollow. Laterally (fig.4), the Aerial features reasonably wide and even dispersion, the top audio octave not rolling off significantly until more than 20° off-axis. But note the flare in the radiation pattern at the bottom of the tweeter's passband: This might tend to make the speaker sound a little bright if placed close to nonabsorbent sidewalls.

In the time domain, the 10T's step response (fig.5) reveals that the three drive-units are all connected with positive acoustic polarity, but that the tweeter's output arrives at the ear slightly before that of the midrange, which in turn arrives before that of the woofer. The 10T's cumulative spectral-decay or waterfall plot (fig.6) shows a basically clean decay, broken only by a ridge due to the tweeter's ultrasonic slope and a slight amount of delayed energy at 3.2kHz.

Overall, this is a superb set of measurements for a loudspeaker from a company making its review debut in Stereophile. I'm not surprised Wes liked its sound; so did I. —John Atkinson
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I never went to dental school, but I used to be friendly with a bunch of dental students. They always had the best parties: Everyone would gather around the nitrous oxide canister and laugh their asses off until they'd drop from oxygen deprivation. (CES is kind of like that, if you've never been to one.)

Anyway, one of the first things you learn as an audio reviewer is never to say you don't hear a difference when you are expected to. To say otherwise is to risk being accused by your peers of losing your hearing: “Can you believe it? Fremer couldn't hear the difference between the Ubangi discs and the Ubetchi discs under his Edible Delusions pre-amp!!! His hearing's gone!”

I make reviewing life more difficult for myself by contrasting two pricey phonocartridges— the AudioQuest 7000 Fe5 costs $2550, the Lyra Clavis Da Capo costs $1895—in one review. While the two designs do sound different, they share a common heritage in Scan-Tech designer Jonathan Carr, and both are hand-built and -tuned in Japan by Yoshinori Mishima.

So, in reading this review, please bear in mind that, while I will put a magnifying glass up to the differences between the two, they sound closer in character to each other than either does to cartridges from Dynavector, van den Hul, or Benz, for example.

Whether or not you think he's succeeded, Jonathan Carr has always tried to build resonances out of, and neutrality into, his designs. Each Scan-Tech design change has been undertaken with the idea of adding rigidity and mechanical integrity. The idea of “tuning” cartridges for different kinds of music, as some designers apparently do, is not part of Carr's game plan. “A resonance is a resonance,” he told me at HI-FI '95, held last April in Los Angeles.

Yet all designers are faced with choices: of materials, and of structures. Ultimately you are hearing someone's sonic tastes: in the case of the Da Capo, Carr's and those of his cohorts; in the case of the Fe5, Bill Low's.

The Clavis Da Capo is a totally new design, not an upgrade or update of the original Lyra Clavis; the 7000 Fe5 is a totally redesigned replacement for AudioQuest's very popular 7000 and 7000 nxs cartridges.

**HAVE CANTILEVER, WILL TRAVEL**

Scan-Tech builds low-output moving-coil cartridges for a number of companies, including AudioQuest, Linn, and Spectral.1 It also markets its own line, under the Lyra brand name (Lydian, Clavis, Parnassus), which is imported and distributed by Immedia out of Berkeley, CA. So what's particularly fascinating about this comparison is, we're contrasting a cartridge engineered and built to designer Carr's specifications and tastes, with one fabricated by him to accommodate those of AudioQuest's Bill Low.

I spoke with both Jonathan Carr and Bill Low about cartridge design choices and tradeoffs, sonic expectations, and consumer demands. When I was finished, I came to a singular conclusion: What's amazing is not that there are outstanding-sounding $2000 cartridges, but that there are good-sounding $200 ones (and there are).

A cartridge is essentially a precision-made, subminiature electrical generator. As in a generator, there is a coil, generally mounted on an iron armature/core, and a gap in a magnet/pole-piece assembly in which the coil/core assembly

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1 John Atkinson reviewed the Linn Arkiv in November '93, Vol.16 No.11; Arnie Balgalvis reviewed the Spectral MCR-1 in July '89, Vol.12 No.7.
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is centered. Movement of the coil in that gap, due to groove undulations, generates a minute electrical signal which is carried via microscopically thin wires to the output pins. A cartridge is essentially the inverse of a moving-coil loudspeaker.

The differences in sound you hear among cartridges are determined by the choice of diamond stylus shape; the cantilever material and its length and diameter; the core and coil materials and their configuration; the magnet material and its physical configuration; the choice of suspension material and its tuning; the damping material; and the body construction.

Most cartridges consist of three basic subassemblies: the diamond-tip/cantilever/coil/core/suspension-wire/stopper-pipe; the magnet/pole-piece assembly; and the body. There are, however, many variations on the theme, and here we’ll be whistling Scan-Tech’s basic tune. But keep in mind that the Clavis Da Cape’s design differs radically both from that of the basic model and from the Fe5’s, in ways which will be discussed later on.

Let’s look at the subassemblies one at a time. The cantilever can be solid or hollow, and can be fabricated from a variety of materials. The AudioQuest Fe5 uses a solid boron cantilever, the Lyra Da Cape, a “Ceralloy” composite cantilever. (Ceralloy is a metal reinforced with ceramic “whiskers,” which Carr tells me are stronger than carbon fiber.)

Why boron? Why Ceralloy? These are designer choices — each yields a different sound. In designing the Fe5 to his liking, Low received samples of various configurations of materials from Scan-Tech and made choices based upon listening and other considerations we’ll get into later.

Both cartridges use a highly polished Ogura PA line-contact diamond stylus. In the Clavis, the diamond’s short, square shank is precision-mounted and glued into the cantilever via a laser-cut square hole claimed to be the world’s smallest. (It measures just 60 microns by 60 microns.) The result is said to be the lowest-mass tip in the world. The AudioQuest’s solid-boron cantilever has a “slice” — a channel made in its tip — and the shank is inserted and glued there. Because of the mounting technique, the Fe5’s shank is somewhat longer than that of the Clavis.

The stylus profile is not as radical as that of a MicroRidge tip, but it is “friendlier,” Carr told me, to setup inaccuracies and won’t chew up records. In fact, I found that with both cartridges, the tip contacted virgin areas of the groove, thus reducing wear noise on many of my older records — a definite plus.

Both tips dug dirt from record grooves I thought were clean, a minus. For some reason, the Clavis was more prone to sludge build-up than was the Fe5, though I have no explanation as to why. The solution, of course, is to play cleaner records; neither of these cartridges, nor any other premium priced unit, should be used with dirty records. In fact, dirty records shouldn’t be played with any cartridge!

In the general model, the cartridge cantilever is bonded to an aluminum pipe which is fitted with a brass or aluminum end piece with a small hole drilled into its center. A tiny piece of wire is passed through the hole and crimped on the other side in the space between it and the end of the cantilever, thus locking it in place.

The wire can be any kind of spring material: piano wire, beryllium/copper, phosphor-bronze (like a guitar string). It can be solid or stranded. Solid wire tends to be more springy, stranded more compliant. In the original Dynavector Ruby — a classic hi-tech cartridge of the late ’70s/early ’80s — a piece of nylon was used instead of wire. The material used in this critical part of the design affects both the compliance of the cartridge and its final sound. This is, as Carr told me, “a designer’s choice.”

The ultra-thin wire is then threaded through a tiny hole in the all-important core/coil combination, which then mounts flush with the back of the aluminum pipe. The wire is threaded through another pipe, called the “stopper pipe” by Scan-Tech, and then it’s crimped on the other end.

There is a space between the two pipes where the wire is free to flex. That, believe it or not, is the pivot point around which the whole setup moves. Thus, when you lower the stylus into the groove and you see the cantilever “give,” it is the wire which is flexing. In order for this single-point suspension system to work optimally, the stopper pipe must not allow to move.

The core itself can either be square, as is it in the Scan-Tech designs (two millimeters square), or it can be an X, a cross, or even a Y shape. The X shape can offer somewhat greater channel separation, but because there is less core material, the cartridge has a lower electrical output. Again, this is a design choice: the highly regarded Benz line uses the X core, for example.

Lyra Clavis Da Cape phono cartridge

The core can be iron, or carbon fiber, or other materials. According to Carr, the Clavis DC’s core is gold-plated “five-nines” (99.9999%) chemically pure iron. The Fe5’s core is also fabricated from “five-nines” iron (thus the Fe5 name), but Low did not say whether it was gold-plated.

A pair of crossed-wire coils are wound around the square cores on both Scan-Tech designs: the Clavis uses “six-nines,” high-purity, stress-free copper; the Fe5, long-grain, “five-nines” “FPS” (Functionally Perfect Silver). Again, these are designer choices based on listening.

The cantilever/coil subassembly is fitted through a cone-shaped hole drilled in the pole-piece, a hole you can see when you look down the barrel of the cantilever of most cartridges. Usually, there is also a hole drilled into the rear pole-piece, into which the stopper pipe fits. Yet another hole is drilled into the rear pole-piece, but at a 45° angle to the first hole. This one is tapped for a set screw, which is used to firmly anchor the stopper pipe.

Consider the miniature size of all of this, and the precision with which it all must be machined and assembled, and you begin to appreciate the difficulties involved in cartridge manufacture.

The space between the core and the rear pole-piece is where disc-shaped rubber dampers are fitted, threaded over the stopper pipe before it’s inserted into the rear pole-piece. Usually there’s a large damper to control bass frequencies, and smaller ones to deal with high-frequency resonances. The wire is the suspension “spring,” the dampers are the “shock absorbers” of the system.

Whether butyl rubber, silicone rubber, or just plain natural rubber is used as the damper is a design choice which, according to Carr, probably has the “single biggest effect on the final sound — that and the cantilever material itself.”

The Pinch Test

This rubber material is what analog devotees are talking about when they say the “suspension” has dried up and a cartridge no longer sounds good. How
long it takes for that to happen depends on the material used, and the conditions under which the cartridge is used. According to Carr, pure organic rubber can last longer than carbon-impregnated rubber, where the additives can attack the rubber from within.

One way to illustrate graphically what happens to the rubber as it ages is to do the "pinch test" on the back of your own hand. Grab the skin in the middle of the back of your hand with the thumb and index finger of your other hand. Pull up and then let go. If you're in your 20s or even 30s, your skin's "settling time" is probably instantaneous. The older you get, the longer it takes for your skin to snap back, and the longer you'll be able to see the ridge of skin you've pinched.

With proper care, your styli may well outlast your suspension, though Carr says that, if the designer knows what he's doing, you won't have a suspension "time bomb." Speaking of which, now that you have a feel for what makes the cantilever "give," you can understand why it is so critical to lower the stylus into the groove gently. If you drop it repeatedly with force, you'll flex the thin wire suspension beyond its elastic limit and your cartridge may "bottom out."

Cantilevers & Dampers
According to Carr, boron tends to have an easier-to-control resonant signature than Cerallo, so on the AudioQuest Fe5 just the two sets of dampers previously described are used. On the Clavis DC, an additional rubber "donut" fits over the entire core/damper assembly—an Ortofon innovation (used originally on its MC-20) which Scan-Tech uses with permission.

Pole-pieces & Magnets
The magnet sandwiched between the cartridge pole-pieces can be samarium/ cobalt, neodymium (the "n" in nsx), or some more mundane magnetic material. Its shape and size can also vary.

The purpose of the pole-pieces is to transfer the magnetic flux from the magnet to the gap in a focused fashion, while preventing stray magnetic fields from reaching the coils directly. A short pole-piece results in a greater amount of magnetic energy reaching the gap (thus greater efficiency), which is good. Unfortunately, it also increases the likelihood of stray energy reaching the gap, which is not good because it increases distortion. The inverse is also true; thus, the designer has to find the ideal balance of magnetic strength and distance from the magnet to the gap.

The original Clavis and the 7000 nsx used long pole-pieces and a very strong magnet to generate a reasonably high output signal with extremely low distortion. The 7000 Fe5 uses a similar arrangement. The Clavis DC, however, offers a radical departure from that scheme in that there are no pole-pieces. There is a similarly shaped structure to anchor the cantilever assembly, but it does not function as a magnetic flux transmitter. Instead, two powerful disc magnets are threaded on the cantilever assembly, with one replacing the back "pole-piece" and the other the front "pole-piece." The gap is therefore defined by the magnets, with the flux created by the surfaces of the magnets themselves, not by the pole-pieces.

But then won't the "stray" magnetic flux increase greatly, thus increasing distortion? Not according to Carr, who claims that two magnets operating in a push-pull mode, with the core in the center, result in both extremely low distortion and the efficient generation of electricity.

No Body & Soul
The final piece of the puzzle is the cartridge body. While some cartridge manufacturers simply glue the motor assembly to the inside of the top plate, in the original Clavis it was securely anchored to the base via the screw which sandwiched the pole-piece/magnet assembly.

To accomplish this, the cartridge mounting plate had to be scooped out to accommodate the top of the pole-piece, an extremely difficult machining job. In addition, the original Clavis further strengthened the mechanical integrity of the cantilever assembly by extending the length of the stopper tube and feeding it through the back of the rear pole-piece and into a hole drilled in the rear of the base — another extremely difficult machining job. (If the hole for the stopper tube and the hole for the pole-piece screw don't line up exactly, the entire assembly is unusable.)

The advantage of this design was better energy transfer from the cantilever to the body to the arm. Usually, vibrational energy reflects back down to the stylus tip. The result was said to be better pitch definition and purer-sounding transients. The design also allowed the body to be easily removed after the cartridge was installed, resulting in freedom from body-cavity-induced resonances. (The reduced cartridge mass also might give a better match with the tonearm's effective mass and the cartridge cantilever compliance — Ed.)

Unfortunately, as Clavis owners discovered, the unprotected motor assembly was more vulnerable to damage, and without a body, there was no way to clip on the stylus guard. In order to do that, you had to replace the body — a somewhat tricky maneuver.

The Clavis DC uses a "monoblock" body and base, in which a single piece of hard-anodized 7075 aircraft-grade aluminum alloy is precision-machined both to accommodate the motor assembly and to provide a mounting base. (In most other cartridge designs, the body is glued or bolted to the base.)

The single-unit, cutaway construction offers freedom from body-cavity-induced resonances, extreme rigidity, and a good deal of protection for the motor assembly. As with the original Clavis, the DC's stopper tube is secured into the rear of the base, but since there is no rear pole-piece, the entire length of the stopper tube fits into the body, thus increasing the mechanical rigidity of the cantilever subassembly.

AudioQuest's 7000 Fe5 is not designed to be played with its body removed, nor does it feature "monoblock" construction or a cutaway body. But, Bill Low told me, that was taken into account in the final design. Why did Low make the decision not to have a removable body? Simple: Low was designing a different cartridge for a different end user.

The best way to describe the difference between the two cartridges is to use a car analogy: The Clavis DC is the Dodge Intrepid; the AudioQuest 7000 Fe5 is the Chrysler New Yorker. Both are based on similar designs, but one is built for speed, the other comfort.

Low told me his goal was to forgo radical design in favor of predictable, bottom-line high performance, hence the Fe5's nonremovable body and its reasonably high output of 0.4mV. By taking advantage of Scan-Tech's precision manufacturing and its ability to custom-combine various components, Low was able to get the design and sound he wanted.

Carr, on the other hand, being the ever-inquisitive thrill-seeking designer, was more interested in innovation, "hi-tech" performance, and speed. Hence the DC's unique in-line magnet, "monoblock" construction, and relatively low 0.25mV output.

Finally: We Listen
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TNT Mk.3: the Graham 1.5t unipivot, and the Rockport Capella air-bearing linear tracker, which is silicone-damped horizontally. (Such damping is a must, in my opinion, for any linear-tracker to perform properly with a high-performance cartridge.)

With the Graham's interchangeable arm tubes, changing cartridges took but a few minutes. It would normally take somewhat longer to switch cartridges in the Rockport; however, since both models place the stylus tip the same distance from the mounting screws, overhang is the same. And both designs place the stylus tip the same distance vertically from the mounting base, meaning that VTA (Vertical Tracking Angle) was essentially the same, all things being equal. Thus, only VTF (Vertical Tracking Force) had to be changed. In other words, with either arm, I could go back and forth within a few minutes. And because these are both precision-built cartridges, azimuth was identical: with the cantilever dead-center perpendicular to the record.

I used the Audible Illusions Modulus 3A preampulator with its Gold MC phono board loaded at 47k ohms. Toward the end of the extensive listening sessions, I inserted the Audio Research PH-3 phono section into the system, but more about that in another review. Other components included: Cary CAD-805 single-ended triode tube amplifiers, the OCM 500 solid-state stereo amplifier, Audio Physic Virgo and ProAc Response 2.5 loudspeakers, and, toward the end of the audition period, the Audio Physic Terra powered subwoofer. Cabling was A.R.T. and Yamamura Systems (both designed by Be Yamamura) throughout, with the exception of the phono cable, which was XLO Signature Type 3. Accessories included Power Wedge line conditioner, Audio Physic cartridge demagnetizer, Shakti Stones, A.R.T. "Q" dampers and Harmonix tuning feet, Bright Star sand boxes, and Townshend Seismic Sinks.

While I played dozens and dozens of records in my listening sessions (such torture!), I focused on a few revealing ones, including Mel Tormé and Friends Recording Live At Marty's New York City (Finesse W2X 37484), Used Guitars by Marty Jones (A&M SP 5208), Jackson Browne's Satin Sheet Before Using (Asylum SD 5051, white-label original mastered by George Piros at Atlantic), Joan Baez In Concert (Vanguard Stereolab black-label VSD-2122), Belafonte At Carnegie Hall (RCA LSO-6006/Classic reissue), The Missouri Breaks original soundtrack (United Artists UA LA 623-3), Miles Davis's Saturday Night In Person at the Blackhawk San Francisco, Volumes I & II (Columbia "six-eye" original), Clap Hands, Here Comes Charlie, Ella Fitzgerald (Verve V-60453 original/Classic reissue), Live and Pickin', Doc and Merle Watson (United Artists UA LA 943-H), Davey Spillane's Atlantic Bridge (Tara 2039), Janis Ian's Breaking Silence (Analogue Productions APP 027), Doris Day's Listen To Day (Columbia DDS 1), Benjamin Britten, Noye's Flood (London OS 25331), Pulse: Works for Percussion and Strings (New World NW 313), Albeniz, Suite Española (Decca/Alto SXL 6355), Tchaikovsky's "Pathétique" Symphony, Monteux/BSO (RCA LSC-1901/Classic reissue), and España (Decca SXL 2020/Alto reissue).

**CLAVIS DC**

It took longer to break this sucker in than any cartridge I've ever used — over a month of constant use. Out of the box, it sounded extremely bright — not harsh, just bright, with an obviously rising top end that shone a spotlight on everything in the upper octaves. I was tempted to load the cartridge down, but since the manufacturer and the importer recommend 47k ohms, that's where I left it.

The Clavis DC demands precise setup. If you're sloppy with overhang, offset, azimuth, VTA, or VTF, it will rip your head off with a harsh, hard, unfor-giving top-end. BUT, once you get it "dialed-in" precisely, it offers superb focus from the very back to the very front of the soundstage, and to the outer corners. This is a "lights on" cartridge that illuminates the proceedings with energy to spare, despite its relatively low output.

Once it was suitably broken in, the Clavis DC proved to be a highly analytical, revealing, lean-sounding transducer, with a "lively" top end and an extremely tight, "fast" bottom end. The latter easily revealed the source of the low frequencies the cartridge was reproducing. Drumskin textures, mallet heads, and bass strings were all defined with tight precision, as were the shapes and materials of the instruments being struck. If your sonic cup of tea is "richness," "warmth," "dying-embers romanticism," you won't be happy with the Clavis DC's bottom-end performance — or with any other part, for that matter, perhaps with the exception of the midrange, where the DC is essentially neutral, though it doesn't sound "liquid."

Minute changes in tracking force altered the overall sound in not-subtle ways. Ideal tracking force was 1.8 grams — the top of the range. Anything less, and the top end began to dominate the picture. I also found that I needed to increase the amount of damping in both the Graham and Rockport arms to achieve a natural timbral balance.

The instruction sheet describes the Clavis DC as "exuberant and exciting," and it ain't kidding. You get the sense that the DC eats whatever energy is sent its way and spits it out the other side with complete abandon. If you (and your playback system) don't get this baby under complete control, it'll run away with your system and steal the music out from under you.

But if you tame it with careful setup, you can get it eating out of your hand and purring like a pussycat. When you do that, you will be rewarded with the sense of a clear path from the master tape to your ears. Not everyone craves reproduction that literal and revealing. Great recordings will give you everything they've got. Unfortunately, so will the stinkers.

On Joan Baez In Concert, there was a sense of Joan standing in front of me in three dimensions — I could see her, and the outline of her guitar, and I felt as if I were listening from the other side of the microphone. The energy just kept coming, as it would if I were hearing Joan live. The boundary line between her head and the expanse of airy, empty stage behind her was revealed with uncanny precision. I could hear the very weak echo of her voice bouncing off the stage's side wall, and I could feel the air circulating on the stage behind her.

The same three-dimensional solidity is evident with Miles Davis's trumpet on the Blackhawk stage, which sounds brassy, and airy, and "live" as Miles moves the horn bell around the mike. It's also totally free from reality-robbing grain and harshness. You'll get this picture only if you've locked the Clavis in with very careful setup. Anything less and the illusion is destroyed, replaced by the clear sensation that a stylus is scraping through a vinyl groove.

On the Mel Tormé album, Mel's voice sounds round and positively mellow, floating on a cushion of air while at the same time locked in three-dimensional focus. I could almost see his lips move, and I could hear him maneuver the air from his diaphragm through his throat and up to his nasal passages as he changed tonality to drive the songs home.
In our opinion, the only time flashing red and green lights are appropriate in your home is in the last week of December.

Fewer parts, better parts, better sound.

NAD

AUDIO AND AUDIO/VIDEO COMPONENTS
Mel's backup group is arrayed behind and to his sides, the piano clearly focused to your left, the rhythm section to your right, and behind them, you can make out people sitting at tables and talking. Glasses tinkle, wine corks pop, and liquid is poured. All of this activity continues way in the background as Torme sings. When he's through, the tables come to life with bursts of applause.

This cartridge really revealed what it could do in the way of driving rhythms forward, exposing inner detail and timbral richness, and placing images in space on a gigantic, airy soundstage on John Cage's *Third Construction* on the Pulse LP. This percussion piece calls for (among other things) 20 various-sized tin cans to be banged on, a gigantic bass drum to be rubbed (creating an ominous, groaning sound), and a conch shell to be blown. These instruments were presented on the stage with three-dimensional precision, focused and unwavering, with transient sparkle and snap but without "etchiness" or grain, or hardiness.

You want to hear a big, wide, airy soundstage? One you can "see" even when no sounds are being presented on it? You want to hear images being thrown way back behind your speakers and into the outermost corners with precise three-dimensional focus? This cartridge did all that with ease, and without smearing or distorting the images at the front or back of the stage.

For all that it reveals in terms of spatiality, detail, and air, for all of its solid focus and portrayal of depth, many analog fans will find the Clavis DC too revealing, too analytical, too ruthless in its spotlight focus on microphone placement and pickup patterns. Along with the musical detail, it passes along some of the behind-the-scenes, better-off-not-heard information as well.

Some will find the highs too forward and "zingy," the overall balance too lean and detailed, the bass too taut and not sufficiently luxurious-sounding. And some will find the dynamic balance a bit on the reserved side, which it is—partly due, I suspect, to its relatively low output. This is a lean, mean machine. I loved it.

**AudioQuest 7000 FE5**

For those listeners who find the Clavis too much to handle, the AudioQuest FE5 provides greater bass dynamics, more low-end "oomph," more richness and warmth, and more overall sonic luxury. With its higher output, I felt more seat cushion and less of the road, gliding along on a much smoother highway of sound. It's an easier, more comfortable ride.

Right out of the box, the FE5 was easier on the ears, sounding sumptuous, yet still detailed and bracing. The FE5 was more forgiving of setup variation; although, like the Clavis, it gave most in terms of focus, clarity, transient speed, and inner detail when it was "locked-in." Break-in time was shorter—about 35 hours of play before I felt it really sang.

The FE5 reproduced the upper octaves (ie, brass, cymbals, etc.) with an extremely attractive, listenable, and harmonically convincing burnished glow, compared to the Da Capo's more aggressive take.

Lost in the warm glow, though, were the little cracks, and even some of the big potholes, which help reveal the inner textures and minute details and shadings of recordings, some good, some bad. Overall, however, the FE5, sonically tailored by a careful listener like Low, provides a canny balance between exposure of fine recorded detail and the luxury that only fine analog can provide. This design should prove to be even more popular than the 7000 nsx — it improves on that fine design in every way.

Because of its higher output, I was careful to match levels when switching from the Clavis to the FE5 and replaying records. On *Clap Hands, Here Comes Charlie* (original or reissue), Fitzgerald’s voice was warmer, fuller, and more mellow with the FE5. Bass was better delineated and lines were easier to follow.

Somewhat harder to make out, though, was the interplay between Lou Levy’s piano and Herb Ellis’s guitar: The two blended together. Some would say that’s more likely what you’d hear live; that separating the two, as the Clavis does, is a function of overly detailed, “hyped-up” sound. I don’t think there’s a clear answer.

On *Joan Baez In Concert*, the FE5 added a warm glow to Joan’s voice which, while pleasant, robbed it of the “you-are-there” quality the Clavis gave it. The side-stage echo was less distinct, as was the three-dimensional image of her head, placed in space with the stage walls way back, separated by a large volume of air. But again, only slightly less so.

On the other hand, with *Belafonte at Carnegie Hall*, that extra bit of warmth helped reveal the shape of the hall’s curved wall of tiers, and it added dimensionality to the background singers (Belafonte’s conductor on "Matilda," for example).

**Conclusions**

I could live quite happily with either of these cartridges, both as reviewing tools and as music reproducers. Both are built to extremely close tolerances, and both offer outstanding control of mechanical resonances and superb trackability. Both must be considered state-of-the-art in terms of build quality and technology. My original Clavis still functions perfectly and hasn’t lost any of its sonic attributes after hundreds of hours of play and some rough treatment in and out of various arms under difficult test conditions. So while $1900 or $2550 for a cartridge ain’t small change, with proper care, either of these cartridges should last indefinitely when used with a first-class, properly damped tonearm.

The Clavis DC offers more detail, rhythmic snap, and transient precision than the original Clavis. The FE5 is far less zippy and etched-sounding than the original 7000 and more liquid and smooth than the nsx, while maintaining the design’s resolution of inner detail. So if you’re looking to replace older models with the newer ones, I don’t think you’ll be disappointed with either upgrade.

If you get the sense that I struggled somewhat to describe the sound of these cartridges, you’re right. As I wrote at the beginning, while these two cartridges sound very different in many respects, they also sound similar in others. Both offer outstanding neutrality in the midrange, particularly regarding string, brass, and reed tone. However, I have heard greater midrange liquidity and sense of “quiet” in the background from some other (more expensive) cartridges. The differences are at the frequency extremes and in terms of low-level dynamic contrasts.

Where the FE5 was big, generous, and easy-sounding, the Clavis was somewhat stingy and reserved, even as it yielded more detail on top. The FE5’s bass was warmer, more powerful, and more luxurious. The warmth crept into the midrange, and smoothed and softened things slightly while somewhat obscuring the inner details which the Clavis DC revealed with ruthless ease.

The Clavis DC put a spotlight on the stage, offering up staggering amounts of inner detail and providing sonic excitement which the FE5 passed on in favor of suaveness of sound. For some, the FE5’s more luxurious sonic balance, and
its greater dynamic weight on the bottom, will be just right; for others, the Clavis’s shark-like precision, its portrayal of inner detail, and its lean, fast upper frequencies will be the ticket to analog happiness.

But coming from the same designer and from the same company, they clearly share many attributes. So even though the Fe5 is warmer and more user-friendly, those who’ve found previous Scan-Tech efforts too “analytical” won’t be swayed by the Fe5, and certainly not by the Clavis DC. In other words, if you’re a Koetsu kind of audiophile, neither one of these is likely to impress.

While this may damn both cartridges for some listeners, when you A/B either one with well-transferred CD versions of the same material, you’ll find overall musical timbres to be remarkably similar between the CDs and LPs (though of course the LPs beat the CDs in terms of air, space, and harmonic detailing). That, to me, is a testament to the musical honesty and resonance-free performance of both of these units (and the arms and ‘table, of course). Frankly, if you don’t like what you hear with these cartridges, I don’t think you really like what’s in the grooves.

Finally, you’ll note that I used both original and Classic Records reissues of Clap Hands, Here Comes Charlie, Belafonte at Carnegie Hall, and Tchaikovsky’s “Pathétique” Symphony, as well as the original Decca and the Alto reissue of España. While these are two different-sounding and -performing transducers, the sonic differences between the original pressings and the reissues were far greater than those between these two cartridges. That puts the differences I’ve described in perspective.

2 I do know that some reviewers who’ve written about Scan-Tech designs with less-than-enthusiastic prose have used what I consider to be non-rigid, non-damped, and thus non-appropriate tonearms with these hi-tech designs. That strikes me as a prescription for disappointment.
Parasound D/AC-1100™ and D/AC-2000 Ultra digital processors

Robert Harley


Common to both: Warranty: 2 years parts and labor. Approximate number of dealers: 350. Manufacturer: Parasound Products Inc., 950 Battery Street, San Francisco, CA 94111. Tel: (415) 397-7100. Fax: (415) 397-0144.

Parasound Products isn't the first name that comes to my mind when considering affordable digital processors and transports. The San Francisco–based company is best known for producing high-value pre-amplifiers, power amplifiers, and Home Theater components, some of which are designed by the legendary John Curl. But Parasound has also been making a full line of digital processors for more than three years.1 In addition, Parasound distributes the highly acclaimed C.E.C. line of belt-drive CD transports, as well as selling a belt-drive transport under its own name.

Parasound has revamped its digital processor line with new HDCDC-compatible processors—and added an Ultra Analog-based model. I thought Stereophile should take a look at what Parasound has to offer in the digital arena. If the company's enviable reputation for high value and good sound for the money holds true for their digital gear, the $950 D/AC-1100™ and $1995 D/AC-2000 Ultra may be contenders at these fiercely competitive price points.

Parasound D/AC-1100™:
$950

Despite its moderate price, the D/AC-1100™ is housed in a sturdy, full-sized chassis and boasts a complete array of inputs and front-panel controls. The good-looking unit has a row of five square buttons that select among the four inputs (two coaxial, one AES/EBU, one TosLink) and invert absolute polarity. LEDs indicate the input selected, the sampling frequency, polarity inversion, de-emphasis, and when the unit is decoding an HDCDC-encoded source. The unit's rack-mounting holes seem a little out of place, but you can fill them with the supplied inserts so they don't show.

The rear panel holds gold-plated digital input and analog output jacks, along with an IEC AC line-cord jack. A digital output jack (RCA) is included for driving a digital recorder. Analog output is unbalanced only.

The D/AC-1100™s design was a collaboration between Parasound's in-house engineering staff and an outside consultant. The Taiwan-made D/AC-1100™ is similar to Parasound's earlier D/AC-1000, but with HDCDC decoding and an improved analog output stage.

Looking at all the parts inside the D/AC-1100™, it's hard to believe they can sell the processor at retail for $950. Nearly every square inch of the chassis space is consumed by the unit's two large circuit boards. Moreover, the D/AC-1100™ has a fair amount of point-to-point wiring, which can add significantly to a product's build cost.

The power supply is massive. Three laminate transformers flank the unit's left-hand side, and supply power to 11 separate three-pin (TO-220 type) voltage regulators, these cooled by oversized heatsinks. Rows of large electrolytic filter capacitors dominate the inside, most of them high-quality Nichicon Muse types.2 Although most designers would prefer more filter capacitance to less (up to a point), this is no guarantee of good sound.

A Scientific Conversion pulse transformer couples the selected digital input to a Crystal CS8412 input receiver. Digital filtering is performed by the Pacific Microsonics PMD100 HDCDC decoder/filter. The DACs are high-quality Burr-Brown PCM63s,3

1 John Curl didn't design the two Parasound processors reviewed here.

2 For the curious, I counted six 6800μF, four 4700μF, three 2200μF, four 1000μF, and four 470μF caps, all of which are bypassed with film-type caps. The total of 72,080μF is more power-supply capacitance than is found in many power amplifiers.

3 Burr-Brown seems to be trying to force processor manufacturers into using their PCM1702 DAC through steep price increases on the PCM63. Many designers prefer the PCM63 despite the PCM1702's better low-level linearity, but I suspect that Burr-Brown wants to phase the PCM63 out. The PCM1702 is much smaller and is said to be easier to manufacture than the PCM63. Parasound absorbed the PCM63's price increase rather than switch to the PCM1702.
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but the middle, "P-J" grade (the "K" designation is the least expensive, and the "P-K" is the most). Although the owner's manual suggests the D/AC-1100m uses two PM63s per channel ("Two Burr-Brown PM63PJ-20-bit push-pull for each channel and fully balanced digital operation"), the D/AC-1100m uses only one PM63 per channel. Perhaps the confusion comes from the PM63's internal "Colinear" architecture, which uses two DAC circuits per monophonic DAC package. Then again, the owner's manual may be referring to Parasound's D/AC-1600m ($1495), which does use two PM63s per channel.

A pair of Analog Devices AD841 op-amps convert the DACs' current outputs into voltages. The AD841 is an excellent choice for this crucial stage, and is also used in some expensive converters. Two more Analog Devices op-amps per channel (the AD845) follow the I/V converters and form the output buffers. The active, third-order output filter is built around an Analog Devices AD746 op-amp. Putting four op-amps in series seems like an overly complex approach.

Commendably, the D/AC-1100m uses analog-domain attenuation to provide the 6dB level reduction required by the HDCD license for the replay of non-HDCD-encoded discs. The alternative is simply to set a pin on the PMD100 to perform digital-domain attenuation, but at the penalty of 1 bit of ultimate resolution.

I must report a minor glitch with the review sample. The front-panel 44.1kHz LED illuminated whenever the unit was powered, whether or not it was locked to a 44.1kHz source. When I fed the D/AC-1100m with 32kHz and 48kHz sources on the test bench, the 44.1kHz LED stayed illuminated, even though the D/AC-1100m was locked to other sampling frequencies.

Listening: My main point of comparison for the D/AC-1100m was the $795 Audio Alchemy DDE v3.0 processor. Alchemy sells the DDE v3.0 with the DTI v2.0 jitter attenuator for $995; this is the combination to beat in this price range, in my opinion.

The D/AC-1100m had a characteristic sound that was strongly evident during the auditioning. The processor reminded me of a classic tube amplifier: The D/AC-1100m combined warm bass with a soft, low-resolution presentation to create an easy-going and relaxing sound.

Specifically, the bass was big, round, and full. The D/AC-1100m made me think of a professional signal processing device called "Big Bottom," which warms up the low end. The already big-sounding acoustic bass on Doug MacLeod's Gone to Find (AudioQuest AQCD1027), for example, was rendered even bigger-sounding by the D/AC-1100m. Even recordings with a tight and lean bass sounded weightier and fuller when reproduced by the D/AC-1100m.

I like bass warmth, but the D/AC-1100m went too far in that direction, to the point where the bass was slow, fat, and ill-defined. It was difficult to differentiate pitch, and the bass lacked dynamics and impact. I couldn't hear the attack and decay of the bass strings very well, and the bottom end was missing snap and liveliness. Every other processor on deck (including the D/AC v3.0/DTI v2.0 pair) sounded more upbeat and rhythmically coherent than the D/AC-1100m.

I was also bothered by the D/AC-1100m's lack of dynamics over the rest of the spectrum. The snare drum in Robben Ford and the Blue Line (Stretch STI-1022) had a reduced sense of snap and power, giving this rhythmically driving music a lackluster character. The D/AC-1100m's soft dynamics and sluggish bass resulted in a slow presentation that was missing energy and excitement. This was my strongest criticism of the D/AC-1100m.

The D/AC-1100m's overall perspective was the most forward in the mids of the five processors I had on hand (DDE v3.0/DTI v2.0, Classe DAC 1, PS Audio UltraLink Two, and the two Parasound units). The mids were projected slightly forward of the loudspeakers, in sharp contrast with the D/AC-2000 Ultra's more laid-back sound. The D/AC-1100m seemed to spotlight the midrange and upper bass, much the way some tube amplifiers draw your attention to those frequency regions.

The mids had some hardness and edge, revealed as a slightly metallic flavor to Ralph Towner's superbly recorded acoustic guitar on Oregon's Beyond Words CD (Chesky JD130). On the same record, Paul McCandless's sopranino sax and oboe sounded more synthetic than when heard through the DDE v3.0/DTI v2.0. The D/AC-1100m had a bit of a veiled coloration in the mids and treble that reduced the sense of immediacy, despite its forward presentation. Similarly, the treble was more subdued than the DDE/DTI pair, yet was simultaneously a little hashy-sounding. Although the Parasound sounded less bright than the Audio Alchemy pair, it tended to emphasize vocal sibilance. The D/AC-1100m's treble was less open and detailed than I expected from a processor in this price range. There was a lack of air, top-end extension, and openness to its presentation.

The D/AC-1100m's soundstage was good for a $950 processor, with nice

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**Playback System & Associated Components**

I auditioned the D/AC-1100m and D/AC-2000 Ultra with three transports: the Mark Levinson No.31, the Sonic Frontiers SFT-1, and Parasound's new C/BD-2000 belt-drive unit (review due next month). Digital interconnects were primarily the excellent Illuminati true 75 ohm RCA cable (my reference coaxial cable), an AudioQuest Diamond X3 balanced cable for AES/EBU connection, and Parasound's new DataBridge AES/EBU cable. The Parasound processors' performance was evaluated on their own and in direct, matched-level comparisons with an Audio Alchemy DDE v3.0/DTI v2.0 combination ($995), a PS Audio UltraLink Two ($2295), and a Classe DAC 1 (now $3995).

Loudspeakers were Genesis II.5s driven by a pair of Audio Research VT150 monoblocks via short runs of AudioQuest Dragon II. The preamp was a Sonic Frontiers SFL-2. Interconnects included AudioQuest Lapis, AudioQuest Diamond, and WireWorld Gold Eclipse (balanced and unbalanced). The system sat on a Merrill Stable Table and a Billy Bags 5500-series rack. Power to the system was conditioned by an MIT Z-Center, Z-Stabilizer II, and Z-Cord II AC cords. The processors under audition were evaluated with their stock AC cords. —Robert Harley

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*Stereophile, April 1996*
"...the combination was magic!"

Wes Phillips, writing about the Thiel CS-7 Loudspeakers with MIT MH-770 Reference CVTerminator Speaker Interface.

Stereophile, Jan '96 vol 19 no.1

“Magic is what happens when the equipment disappears and the performance takes on reality. Thiel’s CS-7 loudspeakers, MIT’s Reference Series Interfaces and Krell electronics make up the heart of a system that can create that same magic in your listening room. That’s why it is one of our most highly recommended systems.”

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depth and separation between instruments. Depth, however, tended to be portrayed in several discrete layers rather than along a continuum from the front of the soundstage to the back. The D/AC-1100\textsuperscript{hi} also lacked the sense of air at the soundstage's outer edges that I heard from the D/DE/DTI combination.

Driving the D/AC-1100\textsuperscript{hi} with Parasound's C/HD-2000 belt-drive CD transport was a mixed bag. The transport's softish bass didn't help the D/AC-1100\textsuperscript{hi}, but the C/BD-2000 did have a smooth and laid-back midrange that complemented the processor.

To its credit, the D/AC-1100\textsuperscript{hi} flaws were less objectionable than those of some processors. The overly warm bass and overall soft presentation are far preferable to an etched and strident rendering. Although the D/AC-1100\textsuperscript{hi} sound wasn't to my taste, this type of presentation has its adherents. Witness the popularity of the EAD processors, which in my opinion trade resolution for smoothness, and bass definition for warmth.

**Measurements:** The D/AC-1100\textsuperscript{hi}'s maximum output level was 2.37V, a little higher output than that of most HDCD-based processors. Output impedance measured a low 28 ohms at any audio frequency. DC offset levels were a low 1.7mV (left channel) and 2.8mV (right channel), and the unit doesn't invert current or polarity.

The D/AC-1100\textsuperscript{hi}’s frequency response (fig1, upper trace) was flat but with a mildly positive de-emphasis error (lower trace), between 0.1dB and 0.2dB. It may just be audible as a greater immediacy and brightness when listening to pre-emphasized CDs because of the error's three-octave bandwidth.

Channel separation (fig2) was excellent, the crosstalk measuring below 105dB at any audio frequency, and reaching a high -120dB at 1kHz. This easily beats the 1kHz-specified 100dB separation in the owner's manual.

A 3/5-octave spectral analysis of the D/AC-1100\textsuperscript{hi}’s output when decoding a 1kHz, -90.3dBFS dithered sinewave (fig3) shows the unit has good linearity, low noise, and total absence of power-supply noise in the audio signal. This is excellent performance, particularly for a converter costing less than $1000.

This test, however, revealed that the D/AC-1100\textsuperscript{hi} truncates incoming 20-bit data to 16-bits. I routinely use 20-bit resolution test signals now that processors are available which will pass 20-bit data to the DACs. Feeding the D/AC-1100\textsuperscript{hi} with a 20-bit dithered source from the Audio Precision System One Dual Domain resulted in the four Least Significant Bits (LSBs) being truncated, and with them, the dither. The result was the appearance of a lot of harmonic distortion because of the lack of dither. When I saw the high distortion, I repeated the test with a 16-bit test signal to create the plot of fig3. Note that even though the Crystal CS8412 input receiver, PMD100 digital filter, and PCM63 DACs will all operate on 20-bit data or more, the D/AC-1100\textsuperscript{hi}’s internal architecture provides only 16-bit pathways.

The CD format is, of course, limited to 16-bit resolution, making this entire discussion moot. The only time the D/AC-1100\textsuperscript{hi} 16-bit limit is an issue is if you use an Audio Alchemy D71 Pro or D71 Pro 32 or the Meridian 518, all of which can be set to output digital words longer than 16 bits.

A wideband spectral analysis of the D/AC-1100\textsuperscript{hi} output when fed "digital silence" (all encoded data words are zero) shows a low noise level and a fairly aggressive analog output filter, seen as the rapid attenuation just above the audiosubband (fig4). The right channel is also slightly quieter than the left channel.

Low-level linearity (fig5) was good, as I've come to expect from the Burr-Brown PCM63 DAC. A very slight negative error can be seen below -80dB, but the DACs are nearly perfect to -105dB. In addition, both DACs perform identically. Note that the PCM63 needs no MSB trimmer, and that its linearity won't change over time. Fig6 shows the D/AC-1100\textsuperscript{hi}'s noise-modulation plot. The traces are tightly grouped, indicating that the processor's noise level and the spectral balance of that noise don't change as a function of

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Fig 1 Parasound D/AC-1100\textsuperscript{hi}: frequency response (cop) and de-emphasis error (bottom) (right channel dashed, 0.5dB/vertical div).

Fig 2 Parasound D/AC-1100\textsuperscript{hi}: crosstalk (R-L channel dashed, 10dB/vertical div).

Fig 3 Parasound D/AC-1100\textsuperscript{hi}: spectrum of dithered 1kHz tone at -90.3dBFS, with noise and spuriae (16-bit data, 3/5-octave analysis, right channel dashed).

Fig 4 Parasound D/AC-1100\textsuperscript{hi}: spectrum of digital silence (16-bit data, 3/5-octave analysis, right channel dashed).

Fig 5 Parasound D/AC-1100\textsuperscript{hi}: departure from linearity (right channel dashed, 2dB/vertical div).

Fig 6 Parasound D/AC-1100\textsuperscript{hi}: noise modulation, -60 to -100dBFS (10dB/vertical div).
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Fig 7, the D/AC-1100 Ultra's reproduction of a 1kHz, -90.31dBFS undithered sinewave reveals a good waveshape and fairly low noise. However, some DC offset shifts the test signal's zero crossing point to the 50μV horizontal line.

Driving the D/AC-1100 Ultra with data representing a full-scale mix of 19kHz and 20kHz sinewaves produced the spectrum of fig.8 at the unit's output. The intermodulation products are few and low in level, indicating good performance. This is one of the better-looking IMD plots I've seen.

Moving next to the D/AC-1100 Ultra jitter, I measured the RMS jitter level at the PCM63's 8x word-clock pin using the Meitner LIM Detector, and made an FFT-derived spectral analysis of the jitter. The measurement bandwidth was 400Hz–20kHz. Fig.9 is the jitter spectrum when the D/AC-1100 Ultra was decoding a 1kHz full-scale sinewave from the CBS Test Disc played on a PS Audio Lambda transport. The spectrum is dense with periodic jitter components, seen as spikes in the trace. The RMS jitter level was a rather high 330ps. With a test signal of all zeros, the RMS jitter level dropped to 260ps and produced a relatively cleaner spectrum (fig.10). When decoding the most difficult test signal for jitter—a 1kHz, -90dBFS sinewave (fig.11) — the periodic jitter components associated with the audio signal rose (the spikes at 1kHz, 2kHz, and 4kHz), and the RMS jitter level increased to 450ps— almost half a nanosecond. This jitter performance is mediocre, and less good than is possible with a Crystal CS8412 input receiver and PMD1100 filter.

Other than the rather high jitter, however, the D/AC-1100 Ultra had good bench performance.

PARASOUND D/AC-2000 ULTRA: $1995

The top-of-the-line D/AC-2000 Ultra is housed in the same chassis as the D/AC-1100 Ultra, with identical front-panel controls and indicator LEDs. This similarity is, however, only skin-deep; the D/AC-1100 Ultra and D/AC-2000 Ultra couldn't be more different inside. Where the D/AC-1100 Ultra is jam-packed with filter caps and point-to-point wiring, the D/AC-2000 Ultra is clean and clutter-free. This isn't to say the D/AC-2000 Ultra sacrifices anything, just that the D/AC-2000 appears to be more thoughtfully realized. If the D/AC-1100 Ultra was designed with a "shotgun" approach, the D/AC-2000 Ultra was designed as if with a surgical laser. The two processors were obviously designed and manufactured independently by different design teams. (Another clue: The D/AC-2000 Ultra's box says "Manufactured in U.S.A."); the D/AC-1100 Ultra is made in Taiwan.)

The D/AC-2000 Ultra gets rid of the D/AC-1100 Ultra's digital output (a seldom-used feature), but adds balanced outputs on XLR jacks. One each of every digital input is provided (RCA, AES/EBU, TosLink, ST-type optical) at the standard price.

AC input is filtered before reaching the unit's two custom toroidal transformers, one to supply the analog circuits and one for digital electronics. The power supply features eight separately-regulated stages, all with three-pin voltage regulators. The D/AC-2000 Ultra uses a fraction of the filter capacitance found in the D/AC-1100 Ultra.

The D/AC-2000's two optical inputs and two electrical inputs are selected separately by relays. A network ensures that the electrical inputs present the proper input impedance to the digital source driving the D/AC-2000— 75 ohms for coaxial and 110 ohms for the
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AES/EBU input. This circuit is followed by a Scientific Conversion 2:1 step-up transformer that increases the signal voltage for input to the low-jitter UltraAnalog AES21 input receiver module.

Digital filtering is performed by the Pacific Microsonics PMD100 HDCD decoder. The 8x-oversampled audio data are converted to an analog signal with an UltraAnalog D20400A 20-bit two-channel DAC module. Although the D/AC-2000 Ultra has balanced outputs, the balanced signal is created in the analog domain after the DACs, not by using two DACs per channel (this is an expensive technique you wouldn't expect in a $2000 processor).

The D20400A's wordclock is conditioned with a jitter-reduction circuit located right next to the DAC. The jitter-reduction circuit consists of a Type D flip-flop that receives the 256x bit clock signal from the AES21 input receiver along with the 8x clock from the PMD100. This circuit reportedly reduces jitter at the point where jitter matters—on the clock signal that controls when the DAC converts its audio samples to analog.

Like the D/AC-1100 HDP, the D/AC-2000 uses analog-domain attenuation to achieve the 6dB of attenuation required by the HDCD license. Analog-domain attenuation is generally better-sounding than the PMD100's digital-domain attenuation. Output filtering is via a passive RLC network.

The D/AC-2000 Ultra's analog output stage is radically different from that used in the D/AC-1100 HDP. It consists of a PM1 OP-275 dual op-amp, along with discrete transistors operating within the op-amp's feedback loop. The OP-275 also acts as an inverter to generate the balanced signal that appears on the rear panel XLR jacks. Each leg of the balanced signal is driven by an npn/pnp transistor pair in a totem-pole circuit.

The direct-coupled output stage uses no DC servo to prevent DC offset from appearing at the analog output jacks. Instead, all UltraAnalog DACs are trimmed during manufacturing to have less than 1mV of offset.

**Listening:** The D/AC-2000 Ultra couldn't have sounded more different from the D/AC-1100 HDP. In fact, it was almost as though the D/AC-2000 Ultra's sonic character was the inverse of that of the lower-priced unit. Where the D/AC-1100's bass was overly warm, the D/AC-2000 Ultra's bottom end was lean and tight. Moreover, the D/AC-1100's overall softness and lack of detail were in stark contrast to the D/AC-2000 Ultra's fine rendering of detail and crystal clear transparency.

But it does a disservice to the D/AC-2000 Ultra to praise it in relation to the D/AC-1100 HDP. I switched to the D/AC-2000 Ultra for most of my pleasure listening right after removing the state-of-the-art Spectral SDR-2000 Pro processor from my system (Spectral wanted it back). The Spectral is a tough act to follow, but the Parasound wasn't disgraced by the comparison. This processor stood head-to-head with some of the best-sounding converters I've heard—and held its own.

The D/AC-2000 Ultra's overall character was much like that of the Classé DAC 1. I raved about it in the December '95 Stereophile. Indeed, the two processors shared many superb qualities. As did the Classé, the Parasound D/AC-2000 Ultra sounded clean, tight, and spacious, and displayed a wonderful dynamic agility.

Starting with the bass, the D/AC-2000 Ultra had a nice tightness and punch that extended all the way down into the bottom octave. Kick drum had a satisfying solidity and impact that conveyed the music's rhythmic drive and power. The D/AC-2000 Ultra presented a "suddenness" to kick drum (and kettle drum in symphonic music) that was exceptional. The D/AC-2000 Ultra beautifully conveyed the dynamic envelope of low-frequency impacts. Bass depth was also superb; bass drum had nice weight and power, the antithesis of the "pencil hitting an oatmeal container" syndrome that robs music of its drive.

The midbass favored tautness and pitch definition over weight and authority. The bottom end was as tight as a stretched trampoline, a characteristic that I've heard lots of bass detail and nuance. I would have liked a little more warmth and power, however. Bass guitar was missing some of the "purring" quality that is so satisfying, and orchestral music tended to sound a little lacking in heft and authority. The D/AC-2000 Ultra's midbass to lower midrange region tended to be analytical rather than visceral. In comparison, the PS Audio UltraLink Two had more warmth, weight, and "meat on the bone," but its bass was not quite as defined as the Parasound's. More expensive Classé DAC 1 was at another level of quality, however, with power, depth, tautness, and dynamics that are state-of-the-art.

The D/AC-2000 Ultra's soundstage performance was beyond anything I've heard in a similarly priced processor. The Parasound presented instrumental images against a jet-black background, with deep silences between notes. The sense of air and bloom was also extraordinary for a $2000 processor. A good example was the previously mentioned Oregon disc, Beyond Words. Paul McCandless's woodwinds seemed to float in space slightly behind the loudspeaker plane. Compared to Ralph Towner's guitar, the woodwinds sounded far more distant. Either McCandless was farther away from the microphones, or his instruments excited the room's reverberation more strongly, giving the impression of greater distance. At any rate, the D/AC-2000 Ultra clearly resolved this spatial information in a way that lesser processors didn't. This resolution of soundstage cues was wonderful on orchestral music, with the D/AC-2000 Ultra maintaining a clear and distinct separation of the individual sections. The music was anything but smeared and blurred. The dense and complex orchestrations on Zappa's The Yellow Shark (Barking Pumpkin R2-71600) were beautifully unraveled by the D/AC-2000 Ultra, letting me hear what every instrument was doing. In the ability to throw individual images between and behind the loudspeakers, the D/AC-2000 Ultra was only a notch below the Classé and better than the UltraLink Two.

Soundstage depth was outstanding, as was the sense of transparency. The D/AC-2000 Ultra revealed layers of depth right back to the reverberation at the hall's rear wall. The expansive soundstage was surrounded by a wonderful bloom that extended beyond the loudspeaker boundaries. Listening to Anne-Sophie Mutter's unaccompanied violin on her recording of the Ravel Tzigane (Deutsche Grammophon 437 544-2) was particularly revealing of the various processors' renderings of hall reverberation. Among the processors under audition, save the Classé, the D/AC-2000 Ultra presented — by a wide margin — the most realistic impression of a violin in a concert hall. The D/AC-2000 Ultra was far ahead of the D/AC-1100 HDP, DDE v3.0/1DTI v2.0 pair, and even the UltraLink Two in portrayal of
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space, depth, and resolution of reverberation decay.

This recording also threw into sharp relief the relative amounts of grain presented by the processors. The D/AC-2000 Ultra had a surprisingly smooth and liquid midrange and treble, with very little grain or grit. The clean treble presentation added greatly to the processor's overall musicality. Surprisingly, the D/AC-2000 Ultra was smoother and cleaner than even the Classé DAC 1. Vocal sibilance, hi-hat, and violin were all rendered with a purity of timbre that was among the best I've heard from any processor.

Fortunately, the D/AC-2000 Ultra didn't achieve this smoothness by glossing over musical detail. In fact, the Parasound was highly resolving of musical information in a way that reminded me of the Classé processor. The music was presented with a finely filigreed quality, with lots of nuance, fine structure, and inner detail. The Classé was, however, a notch higher in its resolution and portrayal of low-level musical information.

The D/AC-2000 Ultra's overall perspective was on the laid-back side of reality, in contrast to the UltraLink Two's more forward rendering. The Parasound processor put the soundstage just behind the loudspeakers, with very little projection to the front. This perspective tended to make me "lean into" the music more (a good thing), but also slightly diminished the sense of life, palpability, and presence. I felt a slight loss of immediacy with the D/AC-2000 Ultra, but not to the extent of feeling musically unfulfilled. Of the five processors under audition, the D/AC-2000 Ultra easily sounded the most laid-back.

In short, the D/AC-2000 Ultra totally outclassed the D/AC-1100\textsuperscript{w}, easily beat the DDE v3.0/DTI v2.0 pair, was a notch better than the UltraLink Two in just about every area of performance, and even approached the stunning—and twice-the-price—Classé DAC 1 in some respects. I had to constantly remind myself that this was a \$2000 processor, not a megabuck unit. The D/AC-2000 Ultra was a real find.

**Measurements:** The D/AC-2000 Ultra's maximum output level when decoding a 1kHz full-scale sinewave was 5.45V at the balanced jacks and 2.73V at the single-ended outputs. Output impedance measured 102 ohms (balanced) and 51 ohms (unbalanced) across the audio band. Despite the D/AC-2000 Ultra's lack of DC-blocking capacitors or DC servo, I measured absolutely no DC at any analog audio output. The unit doesn't invert absolute polarity, and locked immediately to 32kHz and 48kHz sampling frequencies.

Fig.12 shows the D/AC-2000 Ultra's frequency response and de-emphasis error. The HF response rolls off more rapidly than many processors (-0.7dB at 20kHz), but this should not be too significant. The de-emphasis tracking was perfect, the result of the digital-domain de-emphasis performed in the PMD-100 filter. [As explained in earlier issues of Stereophile, while digital-domain de-emphasis gives perfect frequency-response performance, it does not give the noise-floor lowering typical of good analog-domain de-emphasis reduction. — Ed.]

The unit's channel separation (fig.13) was excellent, with the right-channel crosstalk measuring more than 10dB better than the left-channel at some frequencies.

Fig.14, a spectral analysis of the D/AC-2000 Ultra's output when decoding a 1kHz, -90.31dBFS dithered sinewave, was made with a 20-bit source. Unlike the D/AC-1100\textsuperscript{w}, the D/AC-2000 Ultra will pass full 20-bit data from input to the DACs. Note the expanded scale (to -140dB) in fig.14 needed to show the D/AC-2000 Ultra's 20-bit performance. As is typical with these measurements, we can see a hint of second- and third-harmonic distortion as slight bumps in the trace at 2kHz and 3kHz. The overall noise level is low, and the analog signal is free from power-supply noise. There is just the slightest hint of 60Hz noise, seen as the almost imperceptible peaks in the traces at 60Hz. The right channel is about 7dB quieter than the left channel.

A wideband spectral analysis of the D/AC-2000 Ultra's output when fed digital silence (fig.15) confirms the unit's low noise, and its gender output filter compared with the D/AC-1100\textsuperscript{w}.

Fig.16 shows the D/AC-2000 Ultra's excellent low-level linearity. Both halves of the UltraAnalog dual DAC perform identically, with the DACs good to about -110dBFS. The D/AC-2000 Ultra's noise-modulation plot (fig.17) shows right trace groupings, but with a little divergence below about 1kHz. Above that frequency, the five traces overlap so closely it almost looks like a single trace — which is nearly perfect performance.
An examination of the D/AC-2000 Ultra’s reproduction of a 1kHz, -90.31dBFS undithered sinewave (fig.18) shows some differential nonlinearity in the DACs. If you look closely, you can see that the positive half of the waveform has a slightly higher amplitude than the negative portion of the wave. With no DC offset, the zero crossing occurs exactly at the 0V horizontal division.

With no DC offset, the zero crossing occurs exactly at the 0V horizontal division. Every positive peak exceeds the +120μV division, while the negative peaks barely reach the -200μV division. This error is slight, however, the waveform looks better than that reproduced by most processors.

The D/AC-2000 Ultra’s IMD spectrum (fig.19), made by driving the processor with data representing a full-scale mix of 1kHz and 20kHz tones, was clean and free from intermodulation products. The 1kHz difference product (20kHz-19kHz) just reaches the -100dB level. This performance isn’t quite as good as that measured in the D/AC-1100, however.

The D/AC-2000 Ultra had very low jitter and an exceptionally clean jitter spectrum. Fig.20 is the jitter spectrum of the 8x de-glitch clock signal when the D/AC-2000 Ultra was processing a 1kHz, 0dBFS sinewave. (The de-glitch clock in UltraAnalog-based processors is equivalent to the word clock in other converters—it controls when the DAC converts digital input samples to an analog output current.)

This spectrum was taken at the output of the de-jittering flip-flop located right next to the UltraAnalog DAC. We can see virtually no signal-correlated jitter components, and a clean spectrum overall. Compare fig.20 to fig.9, the same measurement made on the D/AC-1100. The RMS jitter level of the D/AC-2000 was also low, measuring just 30ps (in contrast to the D/AC-1100’s 330ps under the same test conditions).

With an input of all zeros—a measurement that indicates the processor’s internal intrinsic jitter in the absence of jitter-inducing test tones—the D/AC-2000’s spectrum was completely clean (fig.21). Comparing fig.20 to fig.21, we can see that the presence of the test signal in fig.20 creates a marginally less clean spectrum. The RMS jitter level in fig.21 was a very low 22ps.

Fig.22 is the D/AC-2000 Ultra’s jitter spectrum when fed a 1kHz, -90dBFS sinewave. We can see the characteristic spikes at 1kHz and 2kHz, indicative of signal-correlated jitter.

Note, however, that the periodic components are low in level, and that the rest of the spectrum is clean. The RMS jitter level rose to 55ps with this test signal.

These jitter measurements indicate that the D/AC-2000 Ultra has low intrinsic jitter, as well as the ability to isolate the clock from signal-induced interface jitter. The nearly constant jitter levels and spectra with these varied test signals indicate excellent performance.

These measurements had been made at the output of the jitter-reduction circuit. Just for fun, I repeated the measurements on the clock at the input of the flip-flop, to test the circuit’s efficacy. Fig.23 is the jitter spectrum with the D/AC-2000 Ultra processing a 1kHz, -90dBFS sinewave—the same conditions as in fig.22. Note the presence of signal-correlated jitter, seen as the strong spikes spaced 1kHz apart. The D/AC-2000 Ultra’s de-jittering circuit effectively filtered the periodic jitter components above 2kHz. The circuit also lowered the RMS jitter level from 66ps (fig.23) to 55ps (fig.22). Although the D/AC-2000 Ultra had excellent jitter performance without the de-jittering flip-flop, it was taken a notch higher by this simple circuit.
A close comparison of figs.22 and 23 shows that many of the periodic jitter components seen in fig.23 are also present in fig.22, but at a much lower level. For example, the spike at 5kHz can be seen in both plots. This phenomenon suggests a fundamental aspect of jitter-reduction techniques: Jitter tends to be reduced in amplitude rather than eliminated. I've noticed, in listening to processors that use Heraculean jitter-reduction schemes, that the transport and cable driving the processor still make an audible difference. Two examples are the Mark Levinson No.30.5, with its "Intelligent FIFO," and the Spectral SDR-2000, with its "TimeStar" jitter-reduction circuit. Both of these techniques would appear to be impenetrable barriers to jitter—but they're not. Consequently, jitter-reduction techniques may make processors sound better and render them less transport-sensitive, but they still leave a trace of the transport's sonic signature. Figs.22 and 23 may suggest why.

The D/AC-2000 Ultra had excellent technical performance overall, with low noise, good linearity, and extremely low jitter.

CONCLUSIONS
The Parasound D/AC-2000 Ultra sets a new benchmark in performance for $2000 converters. It sounds consistently musical and engaging, with a pristine midrange and treble, superb soundstaging, wide dynamics, and an articulate bass. Moreover, the presentation is highly detailed without being overbearing or etched. I greatly enjoyed my time with the D/AC-2000 Ultra, and was surprised to discover this level of musical quality in a $2000 processor.

Even though I used the D/AC-2000 Ultra as my main converter after sending back the Spectral SDR-2000 Pro, and the D/AC-2000 Ultra was at the front end of a reference-quality playback system, I never felt musically shortchanged. Yes, the Spectral was considerably better, as was the Classe DAC 1, but the $2000 Parasound still delivered the musical goods. Compared to the similarly-priced PS Audio Ultra-

Link Two, the Parasound is clearly the better-sounding unit. In short, the D/AC-2000 Ultra is a bargain and tops my list of recommended processors under $2500.

I am less enthusiastic about the $950 D/AC-1100™. While it sounded euphonic, the processor is simply too colored in relation to today's $1000 processors to be recommended. The D/AC-1100™ does lack the worst traits of inexpensive digital: a bright and etched treble, lack of space and depth, and synthetic rendering of timbre. Still, the D/AC-1100™ is outdistanced by the Audio Alchemy DDE v3.0/1DTI v2.0 combination. If your system is bright, lean, and has a recessed midrange balance, the D/AC-1100™ may be worth an audition.

I'll end this review on a positive note by reiterating what a great-sounding processor the D/AC-2000 Ultra is. If you buy any $2000 converter without first auditioning the Parasound, you'll never know just how much musical performance is possible at this price.
Audio Note Kassai Silver power amplifier

Jonathan Scull


There is an almost amusing casualness that pervades the entire East-Coast Audio Note experience. Well before the subject arose of our reviewing one of the Audio Note amplifiers, Kathleen and I had driven out to visit AN USA's Herb Reichert in his converted firehouse on Staten Island.

"Sure, sit anywhere you want! Naww, there's no listening position or sweet spot, just make yourself comfortable anywhere." Anywhere turned out to be a low couch against a brick wall, with the AN speakers off in the distance hard up against the facing wall.

I nearly swallowed my tongue as he cleared the style of the AN cartridge with his finger and literally dropped the arm onto the LP without having muted the preamp. While the Ongaku amplifier (which had survived) sounded exquisite in the midrange, I wasn't impressed by its extension top or bottom. I also felt that any sense of imaging was entirely missing.

When I queried Herb about it, he launched into a polemic regarding the importance of the overall musical gesture, which, in his opinion, had nothing whatever to do with imaging. In fact, he was quite disdainful of the entire concept of "looking" at the soundstage.

We brought Herb back to our loft and played our system for him. I think we had the Symphonic Line Kraft 400 monoblocks hooked to the Avalon Ascents at the time, and that combination, apart from anything else, is a champion at imaging. Curiously, Herb left in obvious agitation. I received a startling fax from him soon after which asserted, among other things, that "imaging" in audio reproduction is crude, carnivorous, and distracting! Herb is so refreshingly... direct.

Edina to Patsy: "It's an image thing, sweetie." Herb soon recovered from his wounds, and we began an interesting dialog regarding the entire issue. He told me he'd run around listening to various systems, investigating "imaging," and felt somewhat less adamant about its lowness in the firmament of high-end audio reproduction. I, for my part, mused upon the entire matter after a seminal Scotch-soaked evening at the Village Vanguard with Jazz O'Holic club denizen Dan Billet.

He and I sat dead center at the first table in front of the stage and enjoyed an evening of totally terrific jazz with the Jimmy Heath Quartet. (Jimmy's brother is the legendary Percy Heath of Modern Jazz Quartet fame.) It was a family affair: Jimmy's brother Albert "Tootie" Heath was on drums, as AlFab and soulful as his brother, Ben Brown did a fine job on bass, with Tony Purrone workmanlike and somewhat self-conscious on guitar. Sitting right in front of the bell of Jimmy's sax (minimally miked), I closed my eyes and considered what I was hearing.

The first word that popped into my mind was "Bloom" with a capital B. The live imaging was not as precise as I'd previously tuned for in my playback system. I sensed that while the transients were still of utmost importance in defining the acoustic envelope (and imaging in the High-End sense), the bloom that followed not only commingled with the transient but also took on a delicious luminosity of its own, the decay gently completing the musical picture. With my eyes closed, the image was slightly more diffuse than the sharply defined presentation I'd enjoyed and endorsed when listening to push-pull amps on the Avalons.

The more things change...

In any case, much has changed since these seminal events took place. Herb has acquired a new business associate, Mike Trei (Audio Note USA), and they've undertaken importation of the German Avantgarde horn-speaker line, which I am told image quite well, in fact. And, of course, Kathleen and I have become quite experienced with single-ended triode amps, driving the Jadis Eurhythmie II hybrid horn speakers that I reviewed in March (Vol.19 No.3, p.109).

However, while much has changed,
much has stayed the same. Mike and Herb lugged the Kassai over to our place, but when I asked about documentation or a manual, Herb told me...there wasn’t any. In fact, here’s all I could find out about the amp, from a fax sent to me by Herb:

“Okay, here goes...all that I know about the Kassai. It’s a single-ended, class-A, directly heated-triode, dual-monaural power amplifier. It’s designed and built by Hirosu Kondo in Japan. The Kassai is two separate parallel 300B mono amplifiers on one copper chassis.

Power output is 17 watts per channel. Weight is 90 lbs. Each amplifier has its own power transformer and power supply choke manufactured by Tango in Japan specifically for this amp. It employs 4N-pure silver primary wire (drawn through custom diamond dies by Audio Note) covered with seven coats of a custom polyurethane. The transformer core is super-Permalyloy and the secondary winding is 6N-pure copper wire.

“The complement (each amp): input/voltage amplifier NOS (New Old Stock) 6072/12AY7, the driver stage NOS 5687. The output stage employs a paralleled pair of 300Bs. The rectifier tube is either a NOS 5U4GB or a Russian CV378. Input impedance is 100k ohms. The output-transformer secondary is wired for 8 ohms. Internal wiring is all Audio Note AN-SPX Silver and power-supply capacitors are Cerafine and Black Gate. Warranty is Lifetime: parts, labor, and tubes.”

The amp, or should I say amps (despite the single, captive, silver-wired power cord with its surprisingly cheap-looking fitting), is quite handsome in an industrial-chic kind of way. The copper top cover is warm and attractive-looking, and counterpoints the glowing tubes and black output transformers at left and right rear. The power transformers, arrayed one in front of the other at the center rear of the amp, are liveried in a curiously dull shade of battleship gray. Japanese understatement, one can only presume. There are two banks of three capacitors each between the output and power transformers, one on each side, and a pair of volume controls up front, between and forward of the input and driver tubes, to correct any small imbalances in the source or tubes.

Speaking of output transformers, it's time to level a small criticism at the Kassai: The small binding posts (lacking a hex head) are on the top cover just rear of the output 'formers, pointing straight up. They are a royal pain in the arse to use. One simply cannot find any way whatsoever on this earth to tighten them down on any speaker cable terminated with a spade-lug, other than Audio Note's own cable — and that only by using the 4mm banana plugs they were supplied with. Thus it was with AN's own AN-SPX speaker cables, twisted together and plugged into the binding posts on the Eurythmies, that the amplifier was auditioned.

THE MORE THINGS STAY THE SAME...

The amp was set up on a Michael Green Tuning Amplifier Stand spiked with a trio of his all-brass AudioPoints. A single Shakti Stone was perched atop the power transformers, set left to right and centered between the two transformers rather than turned lengthwise, which would have covered both transformers more completely; this orientation was based solely on listening. In fact, best Shakti sound was achieved with the Stone sitting upside down so that the rubber bottom padding of the Stone wasn’t in contact with the transformer. (This was a suggestion by Michael Green who eschews damping of any kind as unproductive in audio.)

Interconnects were either XLO Signature (which sounded terrific) or the new Alpha-Core Goertz silver interconnect. This flat silver stuff (also available in copper) continues to impress and amaze with its clean, wide-band, fast, yet thoroughly harmonic presentation.

The front-ends revolved around a Jadis JP80MC up on Shun Mook Super Diamond Resonators. It was fed signals by the following digital systems: all-Jadis (clamped JS1 Symmetrical Con- ventional J1 Drive); all-Forsell (clamped Air Reference 1/v/A converter and the MK.II CD transport sitting on a combo of Harmonix RF-66 Large Tuning Feet at the back corners and a single AudioPoint front’n’center on a Michael Green rack, with a Shakti on the roof of the transport just above the laser); all-Studio Ensemble (DiChrono Drive/DiChrono DAC on their Honeyplate damping shelves, using their Supraflux™ line-level interconnects to the preamp).

Digital datalinks in play were the excellent Illuminati Orchid (AES/EBU), its equally impressive stabilanese the Illuminati Dataflex Studio (coax), the airy-sounding Marigo Apparition Reference Signature (coax), Kimber AGIDL (coax), Ensemble DigiFlux 75™ (coax/BNC), XLO (coax), and Aural Symphonics glass treated with ioGel.

Analog signals were generated by the remarkable Clearaudio Insider mounted on a thin arm with a thimble Teflon spacer on the Forsell Air Force One. Because the phono-stage of the JP80MC is phas-inverting, I reversed polarity on the Insider.

Power cords included a number of effective The Essence cords by Essential Sound Products — (810) 375-5093 — and Synergistic Research AC Master Couplers. (I put the latest generation of the excellent Marigo cords to one side for the moment.) The Kassai’s captive power cord was plugged into an Audio Power Industries Power Wedge 110, and from there into our 30A isolated hospital-grade sockets. I put a Shakti under the Wedge to good effect.

TUBES

To say that Herb was casual about the tubes in this $52,600 amplifier would be an understatement. When I asked him about the AN-branded 300Bs it came with, he really hadn’t a clue. When pressed, he suggested they very probably were Chinese carbon-plate ESTs, which were thought to sound sweeter. (Sweetier than what he didn’t say.) I tried these tubes in the Jadis SE300Bs and a pair in the single-tube Wavelengths, but they wouldn’t settle down and behave — for whatever reason, they’d only work properly in the Kassai.

They did sound pretty good, and were indeed somewhat sweet-sounding. But to me, sweet just isn’t enough for $52k. I didn’t have the Western Electric 300Bs on hand, as those delightful tubes were still with the Jadis amps in Santa Fe, suffering under the withering and disapproving glances of Thomas J. Norton. I substituted the Golden Dragon Supers, which delivered their characteristic lively and punchy musical presentation, but as with the Audio Note tubes, I felt them to sound a bit unrefined and slightly hazy.

Next into the sockets were a quartet of VAIC VV300s. These proved a delightfully synergistic match with the Kassai, their suave and refined voice complementing this expensive-as-hell amp to a fare-thee-well. As I imagine anyone buying one of these expensive Audio Note amps would be willing to shell out the long green for the right tubes, these became my reference 300Bs for the review.

This was in spite of Herb’s initial reaction when I told him I’d be trying the new VAIC tubes: “Not in my amps you don’t!” he exclaimed, turning an inter-
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esting mottled color.

Upon mildly surprised inquiry, it turned out that Herb had imported a number of the more-expensive VAIC VV30 tubes when they were first available. These tubes became well-known for their impersonation of diverse fire-works on the 4th of July! (I became familiar with this behavior when one of the VV30s supplied with the Wavelength Cardinal XS died — see my January '96 review.)

I'd been assured by a fast-talking Victor Goldstein, who seems to lose his notable Transylvanian accent under stress, that the factory had solved these teething problems and that all VAIC tubes were quite reliable now. Confirming this, Wavelength's Gordon Rankin had listened to and measured both the newer VV30 and the less-costly VV300. He'd mentioned in conversation that these VAICs were superior in every way to the earlier tubes he'd been supplied. And indeed, the VV300s proved reliable and trouble-free in operation.

Once I'd settled on the output tubes — it was really no contest — I started evaluating input and driver tubes. Herb had supplied several different 6072 and 5687 drivers, mentioning that the drivers seemed to make quite a difference in sound. When I asked him about the vintage and manufacture of the tubes he'd brought over, he was again short on details: "I dunno, they're NOS GE's and Sylvania. Try em!" He also left some Russian CV378 rectifiers, which were auditioned only briefly.

Once more into the breach, Gordon Rankin intervened to excellent effect, as he had with the Jadis amps. "Jonathan, you just have to call Frank Morris at Gold Aero and ask him to send you some black-plate 6072s and those terrific 5687s he has! They'll really sound great in the Audio Note amp."

I've learned to pay particular attention to Gordon, who must be the most knowledgeable tube guy I know. As he was really insistent — he's not normally a pushy guy — I didn't hesitate to do as suggested. And, of course, Gordon was right on the money once again. The Gold Aeros are a must have for these amps: The improvements in refinement, harmonics, tonal color, micro- and macro-dynamics, and imaging were shocking. I heard it literally seconds after I'd slipped them into the sockets and powered up the Kassai.

**Blue notes**

Wrapping Bluenote Midas Tube Dampers — see February '96, p.179 — around all four of the Kassai's small tubes finished things off perfectly. One of my super-tweakie friends from Australia, with whom I correspond on The Audiophile Network,¹ became frustrated trying to fit the Dampers on small tubes. Here's how I do it: Drop the brass cone into the cap, fit one of the "Harmonic Springs" to the bottom pair of support screws, and lower the springy contraption over the intended victim. I'll settle onto the tube nicely like this, and then you can wrap the top spring around the Damper in situ, so to say.

**Fifty-two big ones: how does it sound?**

One lights up the amp by, first, powering up the input and driver tubes with the leftmost of two toggle switches located front and center, then, waiting a tad, then flicking the second toggle, powering the filaments of the 300Bs.

Listening to the Kassai always proved an engaging and enjoyable experience. Interestingly, of all the single-ended triodes we've tried, parallelled or single-tube, the Kassai Silver set its images the farthest back between the Eurythmics. This was particularly noticeable on the new Holly Cole release Temptation (Metro Blue CDN 831653 2).

While deep, the presentation was anything but recessed. The Kassai, like all single-ended amps we have tried, possesses plenty of that attractive inner illumination in the midrange and up that breathes life into the music. The soundstage the Kassai threw while playing this CD was surprisingly push-pull—like in its size, transparency, and especially focus. At the same time, the sound had many of those special qualities that make the single-ended presentation so approachable.

Actually, pinning down the sound of the Kassai was no easy task. Certainly it was very dynamic and powerful-sounding for an amplifier rated at 17 watts. The power and precision in the accompanying piano and bass on the Holly Cole release, as well as the integrity of her smoky voice and the way the whole construct hung together in space, were impressive, if slightly less lucid and touchable than was managed by the Wavelength Cardinal XS, or indeed, the Jadis SE500Bs.

I was struck by several things while listening to the simply fabulous Classic Records release of Brubeck's Time Out (CS 8192). First of all, no, I am not going to compare the Classic with my somewhat noisy original six-eye ... who cares? This new release has such wonderful musical integrity on its own that my advice is simply to drop your audiophile angst — of which there is far too much around in general — and buy it to enjoy.

The soundstage was enormous, huge, and encompassing. Transients lipped off the speakers with particular speed and a lifelike demeanor. In fact, I'd rate the Kassai's keen sense of pace, rhythm, and timing right at the top of the single-ended heap. The impressive bass was about the best I've heard from a single-ended triode: punchy, dynamic, quite deep, and extremely well-differentiated. Look, it was still single-ended bass, but it was really quite kick-butt, considering. Brubeck's piano sounded powerful, dynamic, and wonderfully ambient, with Paul Desmond's transcendent horn tying everything together.

In focusing in on the horn sound, we get down to something telling about this amp's voice. Its mids and upper-midrange were inviting and warm without ever getting smarmy about it — the Kassai always sounded killer attractive. And that's the heart of this amp — most everything sounds beautiful through it, but hardly in a wimpy manner. Music always sounded punchy, dynamic, transparent, warm, and colorful ... what's not to like, aside from the price of entry?

You really get a sense for the power the amp develops listening to the British vinyl of Dead Can Dance's Into the Labyrinth (AAD DAD 2013). The Inside delivered its signature enormity of soundstage (in this it is practically unrivaled), and the bass transients and power of the drums, especially in that first cut, "Yulunga, Spirit Dance," were truly breathtaking.

The Kassai really delivers a superb sense of scale and dynamics, as with Stereophile's terrific new Festival CD (STPH007-2). My favorite piece is track 3, Darius Milhaud's La Creation du Monde, of which we must have at least half a dozen other versions on vinyl alone. This recording is incredible — ambient, acoustic, dynamic, and super-musical from the get-go. Midrange textures are marvelous, the bass deep and rich, and the highs clear, extended, and joyous. Importantly, when things get cacophonous, the Kassai keeps everything in order, never losing its composure, and seemingly never falling to its knees and clipping. These are the most powerful 17 watts I've ever heard, if not the most expensive as well.

Let's talk about the midrange for a
For many years many audiophiles have marvelled at the sheer palpability of music played through tube electronics. That is why Conrad-Johnson has for nearly twenty years designed and fabricated the best tube preamplifiers and power amplifiers in the business. From the new MV55 and PV10A ($1995 and $995, respectively) through the PV12 and Premier 11A and Premier 12 ($2395, $3295, and $6590), Conrad-Johnson components have defined the "tube sound" for almost a generation.

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moment. I urge you all to purchase Opus 3’s new release, Solo Sonatas for Clarinet, featuring Kjell Fagès (CD 19406). You simply have no idea how well-developed digital midrange textures and liquidity can be until you hear what Jan-Eric Persson has done here. And the music is divine, even if mostly from composers I’m not familiar with, such as Mikael Edlund and Erland Von Koch. While not as lush-sounding as the Cardinal XS, or as ohmniweg gorgeous as the Jadis, the Kassai develops plenty of that special midrange magic that makes single-ended triodes sing. And good lord, is this recording ambient!

The overall sense I’d like to bring you regarding the sound of the Kassai is one of profound but refined power. Not as limpid and pellucid as the Wavelength, nor as glamorous, sexy, and rich-sounding as the Jadis, the Kassai is nevertheless possessed of its own special mixture of musical strengths that deliver the Audio Note version of veracity to the source. Let me put it this way: I was less suspicious of the Kassai than of the Jadis. It didn’t put me into shock quite as much as the French amps, but it was no less accommodating when it came to delivering the essence of the music. I found myself more likely to reach for the dynamic material when sitting down for serious listening sessions than I’ve been with any of the other single-ended triodes we have lived with. The Ellington Jazz Party in Stereo (CS 8127), for example, sounded fantastic in every way—I really didn’t want it to end.

There was an assurance of presentation that belied the Kassai’s single-ended topology. And I guess that’s what we’re all looking for: to transcend the mechanics and get to the music. This the Kassai manages to do, as it had better for the price. Although the sound of the Kassai was something special on vocals, I didn’t feel that almost permanent sense of magic and closeness that I felt with the ultra-simple Wavelength or the Jadis, for whatever reason. But this isn’t a put-down, really. The Kassai got beyond it and delivered an entire musical construct without focusing attention on any one particular asset or another. And when I was not listening critically, it was always an immensely pleasurable experience.

I’LL WEAR IT HOME, THANKS

Who wants to own an Audio Note Kassai? I see a wealthy guy, probably not a raving audiophile, but one who loves music of all kinds. He’s put his trust in a dealer, and has been set up with a music playback system: sensitive speakers and Audio Note electronics. He’s not a super-picky reviewer-type, nor is he a component-of-the-month victim—one would have to guess he spends most of his time making the considerable monies with which to afford such luxurious audio accoutrements. He’s not plug’n-play—he’s more sensitive than that—but he clearly doesn’t want to fuss. I would hope he’s mostly analog. (That’s what sounded best through the Kassai.)

This guy, he just wants to listen to his music and enjoy it. And this the Kassai, as representative of the high-priced, Kon-do-san Audio Note experience, is exquisitely capable of. I’m trying to remember hearing a recording I didn’t enjoy through this amplifier, but I can’t. It should be understood that the Kassai doesn’t achieve this great musical beauty by wrapping everything in a gauzy, warm, gooey, and colored manner—far from it. In fact, on balance, the amp seems to have combined the best characteristics of push-pull with the best of single-ended. It’s certainly the least compromised of all the SE triodes we’ve listened to up until now.

If you ask me which I prefer, I’ll choose, on overall balance, the Jadis SE300B, no matter how it measures. But for sheer musical exuberance, it’s hard to beat the Kassai. As I finish up this review, I’m sitting in the Ribbon Chair hacking away on my laptop, listening to Francis A. and Albert K. (Reprise FS 1024), which I dropped into my choices for R2D4 in the February issue (p.99). Let me tell you simply...I could stay planted in this chair all night!

If you, too, just wanna have fun, and you can afford it, the Audio Note Kassai Silver sure is one way to have your audiophile cake and eat it too.

—Jonathan Scull

MEASUREMENTS FROM T J N

The Audio Note Kassai was warmed up for one hour at 5.7W into 8 ohms, one-third of its rated maximum power. It ran typically hot for a tube amplifier. Its input impedance measured 76k ohms. Its output impedance ranged between 2.9 ohms and 3.1 ohms, depending on load and frequency. As is usually the case with such a high input impedance, I would expect the Audio Note’s frequency response to be affected strongly by different loudspeaker loads.

The Kassai’s voltage gain into 8 ohms was a high 33dB. Unweighted S/N ratio measured 78dB over a bandwidth of 22Hz–22kHz (ref. 1W into 8 ohms), 76dB over a wider 10Hz–50kHz bandwidth. A-weighted, it measured 90dB. DC offset measured 1.4mV in the left channel, 2.5mV in the right. The amplifier inverted polarity.

Fig.1 shows the frequency response of the Audio Note Kassai Silver. The response into 4 ohms was essentially identical to that into 8 ohms and is not shown. Note the expanded scale to show the wide variation of response into our simulated, real-world loudspeaker, a deviation which will be clearly audible. With a load resembling this one (fairly typical), that would mean a noticeable leanness in the deep bass and lower midrange and a softness at the top end, but with a strong immediacy in the upper midrange and low treble.

Fig.2 shows the Kassai’s small-signal 10kHz squarewave response. It has a moderately slow risetime combined with some ringing on the top of the waveform. The 1kHz response, not shown, is better, though still with the same overshoot and ringing (now less obvious) and the slightly sloping top typical of an amplifier with bass rolloff.

![Fig 1 Audio Note Kassai, frequency response at 1W into 8 ohms (top at 10kHz) and into simulated speaker load (right channel dashed, 1dB/vertical div.).](image1)

![Fig 2 Audio Note Kassai, small-signal 10kHz squarewave into 8 ohms.](image2)

![Fig 3 Audio Note Kassai, crosstalk (from top to bottom): L–R, R–L (10dB/vertical div.).](image3)
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The Audio Note's crosstalk is plotted in fig.3. The channels are similar. As you might expect from the dual-mono construction, this is a good result, with only the increase at high frequencies typical of capacitive coupling between channels.

The THD+noise vs frequency performance is plotted in fig.4. It indicates an amplifier which is most comfortable driving an 8 ohm load. Into 4 ohms, the increase in distortion is noticeable, and I would not recommend this amplifier at all to drive a 2 ohm load. There is also a considerable amount of low-frequency distortion, even at the low power level used to generate these results. The subjective “warmth” generated by the high levels of LF distortion here should be audible, even perhaps filling in a bit for the upper-bass dip seen in the simulated real-world load curve in fig.1 (though this will, of course, not be accurate performance). The distortion waveform into an 8 ohm load is shown in fig.5. It is largely second-harmonic plus some noise.

Fig.6 shows the spectrum of the Kassai's output driving a 50Hz bass frequency into an 8 ohm load (more optimum for this amp than the 4 ohms typically used). The power level was 11.4W. As expected from fig.4, the distortion here is high: -22.5dB (about 7.5%) at 100Hz and -37dB (about 1.5%) at 150Hz. While the second harmonic at 100Hz clearly predominates in this measurement, higher-order harmonics are still distinctly present. A similar measurement made into the simulated loudspeaker (not shown) indicates the same trend but marginally lower second- and third-harmonic distortion.

A combined 19kHz+20kHz signal driving the Kassai Silver at 7.3W into 8 ohms results in the spectrum shown in fig.7. This is a fair result: the primary difference component at 1kHz lies at -36dB (1.5%), and the higher-order difference components at 18kHz and 21kHz each reach -35dB (1.7%).

The THD+noise vs output power measurements (at 1kHz) are shown in fig.8. (Note the scale has been expanded because of the amplifier's high static distortion and very low power output.) The actual clipping levels are shown in Table 1. The values here are at a 3% THD+noise level, instead of the usual 1%, but the Kassai is clearly most comfortable driving loads of 8 ohms or higher.

The Audio Note Kassai Silver docs have higher output power than some single-ended tube designs, though it is still no powerhouse. As with all such amplifiers, however, I continue to be concerned with the presence of distortion and frequency-response errors (into real loads) that we know will be audible. Does the sound many listeners like in such amps outweigh these aberrations, or are they due to these aberrations? I can accept the former, not the latter. We cannot yet say with absolute certainty which is the case. It remains up to the listener to let his or her ears, and pocketbook — particularly in this case — decide. It must be said here that nothing in the Kassai's test-bench performance gives a clue to its high cost. The price-performance ratio here can only be rated as poor. I leave it to JS to comment on the sonic price-performance ratio. I know I would think hard before investing this kind of money in an amplifier that severely restricts the choice of suitable loudspeakers — as do all single-ended tube designs known to me. Apparently even unrestricted funds available to the designer will not change the inherent limitations of this design.

— Thomas J. Norton

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StereoPhile, April 1996
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Dateline: Saratoga Springs, New York. While dabbling in speculative equine investments amid the idyllic beauty of upstate New York a few summers ago, I was momentarily diverted by an audiophile experience that has had a lasting effect on me and proved prescient in forecasting developments at the very upper end of preamplifier design. I visited the home of Jon Baier, a local audiophile with a large garage full of electronics parts.

He described a "passive preamplifier" design utilizing only a single resistor in the positive signal path between the output of the line-level component and the amplifier. It’s called a "shunted volume control." Volume is regulated by bleeding off some of the signal voltage through a volume pot to the negative leg of the unbalanced signal. Baier had gotten the idea from another audiophile, who had gotten it from someone else, who had...

In short, the idea is as old as the hills, yet for some reason has not previously been used in commercially available components. Knowing that fewer parts and simpler circuits usually mean better sound, and excited by the knowledge that this was the simplest circuit of all, I built a small passive box with Baier’s help.

WHAT THE SMALL BOX TOLD ME

"Blackness" equates with quiet and low distortion. It’s the silence between the notes that feels like a velvet glove around your ears. It’s the absence of distortion and noise that allows sound to appear in three-dimensional relief against the dark background. I’m sure the majority of audiophiles have grown used to factoring in a degree of hash and noise when they’re adjusting the overall tonal balance of their systems. Frequency balance plus noise and distortion equals perception. Take away some noise, and you find the sound will at first appear darker. But listen more closely and you find it’s not the recorded signal which has lost something. It’s the background, which is now adding less to the total.

Add an AC line conditioner or isolating transformer to your system and the sound gets quieter, "darker," richer. Make a simpler circuit with fewer parts and chances are, it will also sound darker, quieter, richer.

That small box also taught me about purity of tone and the ability to capture low-level harmonics. That needs little explanation—you know it when you hear it. The degree of spread of soundstage was a lesson, too. When I used well-regarded preamplifiers in my system, the soundstage never filled the rear corners of the stage quite as well as when the small box was in use. The single resistor attenuator is the lesson here, not the passive nature of this device, because, as we all know, with a passive unit there are other compromises involving dynamics and impedance matching.

WHAT THE DESIGNERS TOLD ME

When George Bischoff at Melos Audio told me that the MA-333 Reference, the new version of their MA-333 Gold line preamplifier, which Jack English reviewed for Stereophile in November ’94, would incorporate a single-resistor attenuator, my hopes for a huge performance increase skyrocketed. Bischoff and engineer Mark Porzilli identified as additional design goals the improvement of frequency extremes and an increase in dynamic contrast. Toward that end a whole new main circuit board was developed for the line-stage. Optical voltage regulation devices were installed at roughly 20 points on the board. These devices are of very low impedance and have very wide bandwidth, thus giving a claimed 80dB improvement in ripple rejection over other high-tech regulation techniques. That in turn minimizes most of what all power supplies impart to the musical signal.
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These optical devices are also used to develop the phase split for balanced operation; i.e., they keep the positive and negative signals nearly identical during amplification. A traditional method for accomplishing this uses another tube stage, but that method has none of the benefits of distortion cancellation found in the Melos design. Porzilli feels that these optical devices open up the sound tremendously over the tube-stage method, and extend the bandwidth eightfold when zero-feedback design is contemplated, as in the Melos.

An unexpected innovation in the Reference is the use of the tube filaments as resistors in the circuit. An additional power supply for the filaments is eliminated; and Porzilli, who stumbled upon this through experimentation, feels it tightens the bass, adds authority to the unit’s dynamics, and makes the treble cleaner.

The biggest innovation in the Melos MA-333 Reference is the Phototentiometer volume control. It’s actually a very modern implementation of the old design, the shunted volume control described above, but it bypasses disadvantages of earlier incarnations.

The volume control consists of a single 100k ohm Vishay metal-film resistor (two are used for balanced operation) in series with the signal. The output of this resistor goes both to the output and to a light-sensitive resistor with its other end at ground potential. A user-replaceable 8V light bulb resides in a compartment inside the preamplifier chassis and shines on the photo-resistor. The brighter the light shining on it, the less resistance it has.

When the volume control is set to its maximum, “loud” position, the bulb is off, meaning that the photo-resistor has its maximum resistance, thus causing the music signal to flow directly through the Vishay to the outputs. As the volume control is turned down, the bulb shines brighter, meaning that the photo-resistor’s impedance is increasingly lowered. As a result, increasing amounts of the signal flow to ground, and the music is quieter.

This elegant solution keeps a volume pot out of both the positive and negative legs of the circuit and eliminates the capacitive, diode, and wiper distortions typical of conventional volume pots.

How does a photo resistor sound? It’s not possible to separate the sound of this control from all the other changes in the preamplifier, but Mark Porzilli feels it’s the heavy-metal (high atomic number) resistors such as the Vishay (nickel and chromium) and this photo resistor (cadmium) that sound best.

The use of the Phototentiometer eliminates the need for a separate balance potentiometer. When the “balance” knob on this preamplifier is turned, it independently varies the light on the photo-resistor for each channel. Remote control for level and balance is a boon for listeners who usually settle for a compromise setting. Now you can sit back and get it exactly right from your listening position.

There have been some circuit upgrades to the Melos MA-333 Reference preamplifier’s phono stage and more are planned. But since line-level stages are outselling phono stages 30:1, most of these changes are reserved for later in the year. What has changed so far is that the RIAA equalization error has been halved, and one photo-optical device has been added in each channel for voltage regulation. The unit’s output impedance has been lowered to 30 ohms.

What my eyes and hands told me

Like the ’333 Gold, the Reference is still a three-chassis configuration consisting of a line-level stage, the power supply, and a phono stage. The components now sport a flat black finish with gold knobs and lettering; in my opinion, this improves the appearance, affirming its luxurious appeal, and diminishing the visual distraction if your preamplifier resides at the front of the listening area, as does mine.

The power supply has three positions for each channel—off, line, and line+ phono—and comes with connecting wire long enough for you to put the power supply out of the way if you’re strapped for space. The phono stage features front-panel, variable loading for the phono cartridge (5 ohms–47k ohms in 12 steps) for both left and right channels.

The controls on the line-stage, from left to right, are the Stereo/Mono/Mute switch, a polarity-inversion switch, the balance and volume controls, two tape monitors, and a six-position selector switch. In the center of the unit is the small, dark remote-control window. Layout at the rear of the chassis is straightforward and spacious, and offers both balanced and single-ended outputs. This model is also available with balanced inputs by special order.

The MA-333 Reference has two mutes. When the preamp is first turned on, it warms its tubes for about three minutes while the right-side LED flashes red to indicate the Phototentiometer’s muted status. When the left-side LED turns green, pressing the red power button on the remote sends the signal through to the power amplifier. (It is advisable to check the volume setting before doing this.) The second mute is available on the front-panel mode switch. It shortens the output of the whole preamplifier and kicks in automatically if power is cut, saving unpleasant transients from getting through to the amplifier. It needs to be mentioned about here that the volume control is never completely “off”—a low-level signal is always heard, even when the control is turned completely counterclockwise. This is due to the design and limited range of the Phototentiometer compared with a standard volume pot; use the mute on the remote if you need to kill the sound completely.

Only the balance, volume, and mute adjustments are available on the slim, cigar-sized remote-control unit. It would be helpful for all manufacturers to give us remote polarity adjustment, as this effect is subtle and best judged from the listening position.

The feel to the manual adjustment of the volume and balance knobs provides my only criticism of the physical aspects of the Melos Reference. A small electric motor and gear system, used to implement the remote volume control, has a certain amount of play in it—unavoidable play, according to Mark Porzilli. While small, incremental changes in volume are certainly possible with the preamplifier, the “feel” is less precise than with a traditional volume pot. When you use the remote volume control, the feel is still a little imprecise; I suspect that very small changes in level are not repeatable. This has little effect in practical usage, where levels are adjusted by ear, but it still bugs me. Some of the behavioral peccadilloes of high-end equipment have been much more extreme than this, though, and it is a component’s sound that counts.

What my ears told me

I had to make major adjustments in listening to this preamplifier. As discussed in my opening paragraphs, I believe that I, like many other audiophiles, had grown used to the distortions that even the best volume controls add to the sound. I found the differences between the old Gold and new Reference versions of this preamplifier to be consistently identifiable—80% correct identifications in a blindfolded listening test with matched levels, administered by a
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member of The Audiophile Society. In other A/B comparisons with familiar material, I consistently preferred the Reference because it gave me the richer sound with a darker background. I have no idea how this preamplifier will measure on the test bench, but subjective listening consistently and repeatedly told me there was less signal corruption, whether we can identify and quantify it or not.

Nevertheless, there were psychological adjustments to make. Like, you can still miss the distortion — crazy as it seems. And when it’s not there, you feel disoriented, insecure — like when your partner stops complaining.

The head — not emotion — rules, however; psychological adjustments are soon made. I’m now secure in the belief that this preamplifier is at the absolute top of the heap of state-of-the-art units. When I switch back to other preamps I hear an increase in grain in orchestral textures and reduced purity of tone. The relaxed, natural sound of the preamp — the result (I believe) of the Photometer’s reduction of hash and distortion — is its central identifying sonic attribute. It was the reason I could pick it out so consistently blindfolded. In test after test, I noted an enriched, holistic quality to instrumental sound, particularly in the midrange.

Hash and grain. What are they? In my listening, those qualities are heard as a high-frequency outlining of the instruments — a white chalk line, to put it in a visual context. They’re heard as a higher noise floor, a “gray” background rather than a “black” one, and a textural additive to instrumental tone. The low levels of hash and grain in today’s components are not normally perceived on their own, but are heard when going from a quieter component to a noisier one. In the Melos MA-333 Reference, reducing hash and grain had many ramifications on the total sound.

Ambience retrieval and environmental definition were improved. The separate acoustic environments of singer and orchestra on Sinatra’s Only The Lonely (Capitol CDP 7 48471 2) became more apparent with the Reference, in that Sinatra’s voice could be heard as slightly less reverberant compared to the open-sounding quality of the orchestra. Similarly, the opening solo percussion on Ariel Ramirez’s Misa Criolla (Philips 420 955-2) was heard from a blacker background, but one where the reverber times were more distinct than the 333 Gold was able to make them.

Soundstaging was another beneficiary of the lower level of hash. Simply put, with the best CDs and through the phono stage, the sound through Alón 5 and Mirage M1.5 speakers driven by Krell KSA-300 or VTL 300MB amps began about a foot to the rear of the face of the speaker and ran back in a perfect rectangle to the rear corners—audibly “melting” the rear wall of the room. On the Robert Shaw Chorale’s “Deep River” (Deep River, RCA LSC 2247, vinyl) the voices were beautifully liquid, more separated and distinct than I’d heard them before. One of my CD references for stage width is Don Friedman’s piano, comping behind Clark Terry on “Pennies From Heaven” (Portraits, Chesky JD2). Through the Reference it came from the kitchen, way to the left of the left speaker.

Treble was smooth, sweet, extended, and (need I say it again?) free of grain. The midrange, as noted above, was consistently richer than in the previous model. The bass range was well-defined to its lowest reaches, as heard on Jean Guillou’s organ performance of Bach’s Goldberg Variations (Dorian DOR-90110). No part of the frequency spectrum was emphasized in relation to the others.

**WHAT SONIC FRONTIERS TOLD ME**

How would you match the MA-333 Reference to other components? A comparison with the Sonic Frontiers SFL-2 preamplifier, reviewed very favorably by yours truly in the November ’94 Stereophile, is instructive. The SFL-2, with its “direct inputs” and stepped attenuator, is no slouch in the tonal purity department, either. But the SFL-2 had more energy in the treble range than the Melos Reference and thus would allow more imperfections in recordings or hardware to be heard. The playing field is therefore not level in judging ultimate freedom from hash and distortion. It would be interesting to hear the results if it were.

The SFL-2 also sounded more dynamic than the MA-333 Reference. On Orquesta Nova’s “Milonga del Angel” (Salem New York, Chesky CD JD86), the Sonic Frontiers carried the bass line and piano attack with more emphasis and involvement. These two differences in presentation were borne out repeatedly, regardless of software, though of course different musical selections will suit different preamplifiers.

Matching line-level components of known character with the preamplifiers reconfirmed my conclusions. The very dynamic, solid-state Monarchy Model 22B DAC, a unit that makes no attempt to artificially smooth the highs, proved to be a good match for the Reference. On some material, this processor could be too aggressive with the SFL-2. In contrast, the sound from the excellent new Sonic Frontiers SFD-2 Mk.II DAC — the king of smooth — really became too dark through the Reference.

I had the opportunity to listen to the Melos MA-333 Reference in a system with Infinity IRS speakers and Melos 400 amplifiers. With the Infinity’s battery of woofer drivers and large speaker/room interface (read: large, room-filling sound), the question of dynamics was sidestepped. With smaller box speakers, one might easily desire the SFL-2. I don’t want to overemphasize this point, because the Melos’ dynamics were good — just not as good as the SFL-2, which remains the king in that department.

All components need to be properly matched to a system to “work.” I have a sneaking suspicion the Melos MA-333 Reference will be happiest in neutral-to-bright systems, where dynamics will not be an issue, while the SFL-2 will mate with neutral-to-dark systems, where dynamic contrasts are desired.

**WHAT VINYL TOLD ME**

The MA-333 Reference phono stage sounded wonderfully dynamic when I used it with a Sumiko Blue Point Special cartridge. It compensated nicely for the slightly understated dynamics of the line-stage. The just-perceptible softness of attack noted in the review of the ’333 phono stage (November ’94) was gone. Detail was exact without being analytical, both through my own system and through Infinity IRS speakers with a Parnassus cartridge. The sound was intimate and filled the room with a wonderful bloom of sound.

The presentation was not as distant-sounding as some might prefer, but it suited my taste well. I like involvement in the music. I don’t like to imperiously peer over my glasses at the front of the room and experience the sound second-hand. Distance is not godliness. As noted earlier, Melos plans further revisions of the phono stage, so I’m keeping my comments on it short. — Russell Novak
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Fig. 1 Melos MA-333 Reference line stage, unbalanced frequency response (top) and balanced (bottom) (right channel dashed, 0.5dB/vertical div.).

Fig. 2 Melos MA-333 Reference line stage, balanced crosstalk (10dB/vertical div.).

Fig. 3 Melos MA-333 Reference line stage. THD+noise vs frequency at 100mV in balanced mode (top) and unbalanced mode (bottom) (right channel dashed).

Fig. 4 Melos MA-333 Reference line stage, balanced mode, spectrum of 50Hz sinewave, DC-1kHz at 5V into 100k ohms (linear frequency scale).

Fig. 5 Melos MA-333 Reference line stage, balanced mode, distortion (%) vs output voltage into 100k ohms.

The phono stage wasn't measured; readers should refer back to the Vol.17 No.11 review of the Melos MA-333.) Its output impedance at its main outputs measured 22 ohms balanced and 11 ohms unbalanced. Each measurement was about half that specified, but the differences are irrelevant at these low values (though, everything else being equal, a lower output impedance is generally a plus). The output impedance only changed marginally with a change in the level control. The input impedance was 50k ohms (right channel, slightly lower in the left), and dropping to 28k ohms at a 12.00 setting of the level control) — again, slightly different from that specified, but on the “good” side. (A higher input impedance in a line stage minimizes matching problems with related equipment.) The output impedance at the tape output was just over 25 ohms with a source impedance of 25 ohms and 589 ohms with a source impedance of 600 ohms, indicating an unbuffered tape output.

The DC offset at the Melos's outputs measured 6.6mV in the left channel, 12.6mV in the right, though it fluctuated considerably. With the front-panel phase control set to positive, the unbalanced output was non-inverting, and pin 2 of the balanced output was positive. The preamp's maximum voltage gain measured 215dB. Its unweighted S/N ratio (balanced) was 84dB over a 22Hz-22kHz bandwidth (ref. 1V); 72.7dB over a wider, 10Hz-500kHz bandwidth; and 89.5dB, A-weighted. The corresponding unbalanced figures were actually about 6dB better: 90dB, 78.6dB, and 95.4dB, respectively.

The MA-333 Reference's frequency response is shown in fig.1. The high-frequency response rolls off slightly faster in the balanced mode, but otherwise there is little to comment on here. The volume control tracks within 0.5dB down to very low settings. The crosstalk shown in fig.2 is fair; more pronounced than in the best preamps we have tested but not more than adequate for full stereo performance. Notable is the identical crosstalk in both channels, something rarely encountered.

The variation of THD+noise with frequency for the Melos is shown in fig.3. This was taken for an input of 100mV (1.2V out). The distortion is very low across the full range; interestingly, it was slightly higher in the balanced mode. Fig.4 shows the Reference's output spectrum reproducing a 50Hz tone at an output of 5V — well above the level needed to drive any consumer power amplifier I know of to full power. The third harmonic at this frequency is slightly higher than the second, at just over -60dB or 0.1%.

The variation in the Reference's THD+noise percentage against output voltage (at 1kHz) is shown in fig.5. The minimum distortion occurs at 1.2-1.5V out, 12V corresponding to an input of 100mV, the value used for the THD+noise vs frequency and crosstalk measurements. At lower output levels, the reading is dominated by noise rather than harmonic distortion. Note that the 1% THD+noise value is not reached until the preamp is putting out in excess of 15V!

This is a solid set of test bench results for a tube preamplifier.—Thomas J. Norton

WHAT I TELL YOU
In the MA-333 Reference, Melos has succeeded in creating a preamplifier at the very top of its class. Its price must be considered very reasonable, considering the sound quality. The Phototriometer allows the Reference to achieve a new level of tonal richness and absence of grain which, in turn, has many corollary benefits for soundstage quality, ambience retrieval, and long-term listenability. I was never truly conscious of this preamplifier imparting a particular sound to the music; in fact, I played it for hours and hours on end without listener fatigue. So relaxed and natural is its sound, I began to think of it as being inextricably intertwined with nature itself—the Melos MA-333 Reference is a Nature Symphony.—Russell Novak
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STEREOPHILE, APRIL 1996
METAPHOR 2 LOUDSPEAKER

Around September '95, I began to hear rumbles out of Chantilly, VA that changes were in the cards for the Metaphor 2 loudspeakers I reviewed last July (Vol.18 No.7). Accordingly, I had a new pair shipped to Santa Fe so we could find out what Metaphor had wrought. They'd been busy — totally revamping the design. Bill Peugh regaled me with a list of over ten changes/refinements, encompassing everything from the cabinet to the shipping cartons. Only the price, it seems, is unchanged at $5950/pair.

First off, while the enclosure is still constructed on the rigid, layered model of the original, it is now precision-cut, with all internal edges rounded and all joints interlocking. The baffle is 2" thick, the rear wall 1", and side walls vary in thickness from 1" to .5". Internal damping has been reduced (a by-product of greater cabinet rigidity) and the enclosure has even less of a vibrational "signature" than before, according to Peugh. The wedge-shaped side panels are now meticulously constructed from solid wood, veneer, and MDF — they serve as an essential component of the cabinet tuning — and there is a new, more attractive finish as well.

The drivers have been modified (Metaphor doesn't say how, only that the noise floor has been reduced), the internal wiring has been changed, and the grille is now nonremovable. The crossover is unchanged — it is still housed in a separate enclosure within the speaker cabinet — but it no longer rests on its own set of spikes. It remains decoupled from the cabinet, but moving the speaker has been made much simpler — thank goodness! And these days, there's even an owner's manual.

Reading the manual, I was struck by the phrase, "Final tuning of room position should only be done after a minimum of 200 hours of playing time." Two hundred hours? Who are they kidding? I thought, I've never had to spend that much time breaking in a speaker. So I set 'em up in Stereophile's listening room — about 25" from the rear wall and positioned to focus 2' behind my listening position — and played 'em through the weekend. Come Monday morning, I was squirming in my listening seat — obviously finding it hard to concentrate on the music — when JA walked through on his way to his office. He stopped and listened for a minute, then opined, "Kind of stiff, aren't they? Why don't we give them a good kick in the arse?"

Chortling his evil, editorial chortle, he pulled out a copy of the Stereophile Test CD 3 (STPH 006-2) and cued the burn-in track onto infinite repeat. This is a fine test: the assembled Stereophile staff bang on whatever came to hand, shouting, and playing kazooos. It's noise, random and persistent, overlaid with deep bass-synthesizer sweeps that can really rattle your foundation — even that of your house. For the next week, I ran that track at a fairly high level. Each day I'd come in and check on the Metaphors, each day they sounded looser and more limber — and much more coherent. I may well have put those 200 hours on them before I began to feel they were equal to the speakers I'd heard originally. (By the way, I could never have done this quick'n'dirty break-in at home. The burn-in track is fun, but I can't guarantee anyone's sanity after prolonged exposure to it.)

At this point, I got down to serious listening with a system consisting of a Krell KPS-20i CD player, an Audio Research LS-7 preamplifier, a VAC 80/80 or a Krell KSA-250 power amplifier, and TARA Labs RSC Master interconnects and speaker cables.

The VAC had been one of the amplifiers I'd used to good effect in my audition of the original Metaphor 2, but something didn't sound right when I began my serious listening. The midrange was glorious and the highs were sweet and liquid — but the low end bloomed all over the place, lacking pitch definition and impact. O-tay, I thought, I've given the speakers a lot of time to break in, now let's fine-tune their placement. By pulling the speakers further into the room, I got rid of the boomy, underdamped bass, but at the expense of considerable extension. I liked the basic sound I was getting, but felt I was giving up too much potential. The earlier 2s had been a cinch to drive. Perhaps, I thought, these new guys aren't quite as sensitive. I grunted the KSA-250 into place and boosted it up, Better. Much better.

The Krell really took charge, and the bass response was astonishingly deep and fast, but it wasn't quite as extended as I thought it could be, so I moved the speakers toward the rear wall again. Almost, but not quite, back to their original position, to be precise. Ahhhhh. Now we were cooking!

As I listened to more music, I began to sense that the Metaphors I knew and respected were in the room at last. The top end was extended but not etched. The midrange was glorious. I couldn't get enough of vocal music — I played pre-Gregorian chant, gospel, sensitive singer/songwriter types, and an assortment of my usual favorite country songwriters. It was sounding pretty good. Yup. Pretty darn... Oh, who was I kidding? Something was still wrong: As good as the system sounded, I felt removed from the music.

As this auditioning was going on while we were preparing "Recommended Components," I'd been re-reading Steven Stone's recent preamp reviews, in which he kept maintaining that the best preamp is the least preamp. I had also reread Martin Colloms's October '95 review of the Krell KPS-20i — which includes a FET-switched attenuator. Hey, we have a 20i at Stereophile! I took the LS-7 out of the circuit, installed the KPS-20i, and started over.

OH MY STARS AND GARTERS! It's alive! It's alive! Music now had its dance-like properties restored and the Metaphors presented it with detail and clarity. The bass, while not subterranean, was extended, rock-solid, and well-defined in pitch. With discs featuring well-developed ambient information, the speakers disappeared into the different acoustic of the recording venue in a most satisfying way. Transient speed was exceptional — up there with the best I've heard. And, as always when you break through the good-sound barrier, I just wanted to play disc after disc after disc.

MC called it right, the Krell '20i is a phenomenally transparent, dynamic, involving component and the Metaphor 2 (revised) reflected those properties — no, assumed them. Steven may be on to something, as well; I'm going to have to rethink my assumptions about preamplifiers as a result of this experience.

I whipped out one of my favorite torture tests, Corigliano's Symphony 1 (Erato 61132-2). The third movement starts rather sedately — there are passages first with muted cello, then with a
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piano heard offstage in the distance — but then builds, inexorably, to a shattering climax that will tax any system's dynamic limits. The Metaphors handled it with aplomb. The cello was warm and slightly nasal, as it should be, and the distant piano was clear and perfectly articulated, although...uh...distant. As the orchestra lumbered along in fits and starts toward the climax, the 2s kept their composure; at increasing loudness levels, they remained unconstituted and open. Even during the massed cacophony of the penultimate measures, the Metaphors sounded as though they could continue to play even louder and louder. I've heard very few speakers that can match this level of dynamic performance — and most of them cost far more than $5950/pair.

Guy Clark's *Boats To Build* (Asylum/ American Explorer 61442-2) features a duet with Emmylou Harris, "I Don't Love You Much," that stands as one of my tests for natural vocal timbre. Clark sings in a gruff, almost (not to put too fine a point on it) croaking baritone and Harris's silvery soprano sparkles above it. The sound is intimate — you almost feel like you're eavesdropping on pillow-talk — and the acoustic instruments are right there in the room (a small one) with the singers. It was all there. Perhaps there was a shade more distance between me and the performers than I have grown accustomed to, but Stereophile's listening room is a lot larger than my living room, where I listen in the nearfield. That said, we were all in the same room and, emotionally, on the same page.

I did become aware, over time, of some hardness in the 5–7kHz region. Mild, to be sure, and not consistent over the entire region; it was more a feeling that notes would sometimes pop out of passages with an emphasis that seemed ever-so-slightly misplaced. I, on one of his trips through the listening room, suggested that piano music might tell the tale, so I played Cécile Ousset's artful interpretation of Ravel's Piano Concerto in G (EMI 7 54158 2). As I listened to the *Adagio*, I felt that some of the notes in the long, lyrical piano line were emphasized in a way that had nothing to do with Ousset's interpretation. This was subtle, to be sure; if I were less familiar with the performance, I might have missed it completely. It was as though she were playing some keys with more emphasis than others — as though she were having to play around the limitations of a balky instrument. As that long, mournful, melodic line comes to a close, right before the orchestra enters, the score calls for a trill: The speaker's emphasis of specific notes turned the trill from a smooth ornamentation into a ragged one.

I don't want to make too much of this flaw; piano is really, really hard to reproduce properly and, in my experience, most speakers in Class B have colorations of similar intensity. This one just happened to fall into an area where I am particularly sensitive. I'm not beyond suspecting that the revisions in the Metaphor 2 have significantly lowered the noise floor of the speaker itself. It's quite possible the original shared this mild flaw, but masked it with its cabinet signature.

On the whole, my experiences with the Metaphor 2 (revised) were immensely enjoyable. Like its predecessor, it made me want to listen to music — all types of music — from morn until late, late night. It has astounding dynamic range for a speaker at this price point and, while not plumbing the bottommost depths, its articulate bass is profound. I found it extended on top: easy to listen to, but not overly sweet.

From my experiences with the VAC PA80/80, I suspect that Metaphor has sacrificed some sensitivity in the revised version. Careful system matching is, as always, advised. This reads like a cautionary note, and in a way it is, but it is also an acknowledgement of the very high payoff in listening pleasure that such attention to detail can offer. Place the 2s properly, pair them with an amplifier that has authority, and never, never compromise their transparency — I discovered the hard way that they take on the personality of whatever is upstream from them — and the Metaphor 2 will transport you to the realm of music. And ultimately, *that* is what it is all about.

— Wes Phillips

**SHAKTI ELECTROMAGNETIC STABILIZER**

I hate to admit that it was several weeks after Ben Piazza sent me some of his $230 Shakti Electromagnetic Stabilizers before I got around to trying them.1 I purposely sat the box where it couldn't be ignored. Even so, I shirked my duty as long as I could. Why? you might justifiably ask. Aren't Stereophile writers supposed to *jump* at the chance to try new products? Well... yeah, we are, but in my case, after a long day of working with the stuff, the last

1 The Shakti Electromagnetic Stabilizer is manufactured by Shakti Audio Innovations, 2405 Cloy Ave., Venice, CA 90291. Tel: (310) 305-8857; Fax: (310) 827-8373. The US distributor is Musical Surroundings, 5856 College Ave., Suite 146, Oakland, CA 94618. Tel: (510) 420-0379. Fax: (510) 420-0392.

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1 Stereophile, January '96, Vol.18 No.1, p.241.
I want to do when I come home is get into Critical Listening Mode and do the audiophile thing. My idea of a good time (one of them, anyway) is to crank up the tunes, kick back, and groove.

One night I came in late and tripped over the box. Had it moved of its own volition? It was trying to get my attention. I couldn’t ignore it anymore. I broke out the Shakri Stones. “All right,” I said. “Let’s get it on. Show me what you can do.”

To say that I am skeptical of some of the more mystical aspects of this hobby is to put it mildly, and I was not favorably disposed toward anything the Shakri Stones might contribute to my listening pleasure. Nonetheless, I tried to get centered and give them their day in court.

The instruction sheet suggests listening to some well-recorded female vocals at a pleasant level (always a good idea) to get a fix on how your system sounds without the Stones, then trying just one of the amp, preamp, or CD player to find out if it makes a difference. I pulled out discs of Jennifer Warnes’s tired-but true Famous Blue Raincoat (Cypress 661 111-2), Tracy Chapman’s self-titled first album (Elektra 60774-2), and Suzy Bogguss’s Greatest Hits (Liberty CPD 528457), and played one track from each: the title song from Warnes, Chapman’s “Revolution,” and Bogguss’s “Someday Soon.” The first two are well-enough recorded to have received golden-ear endorsements—the Warnes was an R2D4 in 1991—but the Bogguss is just a bit too overproduced to make the cut. However, I like little Suzy’s voice, and some of the songs are great, so I gave it a spin.

In every Stereophile review, there comes a place where the writer has to list all the equipment that was directly or peripherally connected to the device under test, his ancestry, his blood type, his top ten films of 1959, and the best specimens in his coin collection. I hate that. When I come to that part in an equipment review (you can always see the cluster of capital letters and roman numerals coming a few paragraphs ahead), my eyes start to glaze over and I skip immediately to the conclusion.

But just to be fair, my system was configured as follows: Source was a Randy Tomlinson-modified JVC XLZ-1010TN CD player with an XLO power cord, feeding a Sony TA-E77ESD preamplifier through XLO Type 1 interconnects, each of which has a Radio Shack ferrite RF suppressor clamped around it. (The Sony is an interesting animal—with an inboard DAC, it will accept three different digital sources and lock onto 32, 44, or 48kHz sampling rates. It also has a “Source Direct” feature which bypasses everything but the balance and remotely-controllable volume. Cool.) The Sony feeds a George Kaye-modified Hafler XL-280 (big power supply, tube gain stage) through Nordost Flatline interconnects. Speaker cables are 10’ each of Kimber 8TC hooked to an old pair of mint-condition Dahlquist DQ-10 loudspeakers, which I picked up used for next to nothing. There are also a couple of tape recorders which I use from time to time.

All the electronics are plugged into a heavy-duty outlet strip whose cord is looped several times around a ferrite toroid for RFI and EMI suppression. The system sits diagonally in one corner of a small (13.5’ by 14.5’) room which opens on one end into the kitchen. My lightweight, exceedingly comfortable listening chair, an Amish rocker, is in the opposite corner from the hi-fi, allowing me to sit at least 10’ away from the speakers and still have a few feet between me and the back corner. (I’m not a big fan of nearfield listening.)

Behind me is an open doorway leading to the bedroom and bath. In short, this is a real-world working-class audiophile’s
system, in a real-world working-class abode. For my purposes here, take note of the Dahliquist speakers: They lack extension at both frequency extremities, are not very revealing, and present at best a shallow soundstage, but are otherwise well-balanced—an okay compromise for me at the moment, since most of my listening is done while I am moving about the house doing other things.

So, back to our story: I listened from the “sweet spot,” such as it is, to the three female vocals, then went back and listened to the first one (Warnes) again. Having loaded these acoustic images into my short-term memory, I had a pretty good fix on how it all sounded. Leaving the volume control untouched, I took one of the Shakti Stones, placed it square on top of the JVC, and played “Famous Blue Raincoat” again.

I’ll be damned if there wasn’t a whole new level of depth and clarity to the presentation. Pretty amazing. From the midrange on up, everything sounded cleaner, that cool-breeze-after-a-har- rain kind of cleaner. The low-level high-frequency grunge to which I had adapted—“This is as good as this system is gonna sound in this room”—was noticeably diminished. I repeated the experiment with “Revolution” and “Someday Soon” (and with plenty of other music since) and found that the effect was repeatable and verifiable. I’ve tried it on a few other folks and they’ve heard it too. Like all sonic effects, it varies with the type of music, from subtle to pronounced, but it was always there.

With four of the Stones to play with, I tried various configurations. Stacking them gave no noticeable improvement over the single Stone. Placing them in a foursquare pattern flat on the player—ditto. Placing one each on the preamp, power amp, and CD player? Again, no improvement over the single Stone atop the player. Ed Shefel, an audio consultant who recommended I use Shakti Stones, told me he was using eight of the Stones in his system, even on top of his speakers. I wasn’t able to verify any kind of cumulative effect, nor was I able to hear any difference by varying the angles at which the Stones sat, as some people have reported.

I also wasn’t able to hear much effect from putting them individually on either the preamp, which is very ruggedly built and well-shielded, or the power amplifier. But I did hear a marked decrease in grunge, an increase in vocal and instrumental clarity, and better depth of presentation when they were placed on the CD player. A more revealing pair of loudspeakers would probably uncover more subtle effects that the Dahliquists are masking.

The best result I was able to obtain with my system as it is usually set up was with two Shakti Stones on the CD player: one on the left toward the rear, bridging the power supply and transport; and another in the center-right, over the main printed circuit board. And that is where they remain.

My thought about why the effect was so obvious with the CD player is this: The Shakti Stone acts to absorb and damp out a wide bandwidth of parasitic oscillations, radio-frequency and switching noise, electromagnetic radiation, etc.—all the electrical nasties that exist as by-products of digital circuitry, especially digital power supplies. The JVC XLZ-1010, as sweet as it sounds, has lit- tle in the way of internal shielding.

I was also able to try my bedside system (Radio Shack 3400/DAC-in-the-Box/HeadRoom Supreme amplifier/JVC HA-D990 headphones) with and without Shakti augmentation. I placed each of the three active devices on a Stone, individually and as a group. The effect was the same as in my main system: a reduced level of background hash and a corresponding increase in clarity. Dynamic detail improved because the noise floor was a bit lower. The 3400 seemed to benefit the most from sitting on the Shakti, followed by the HeadRoom. I couldn’t really decide if the DAC-in-the-Box was helped or not. (Incidentally, I also have an Audio Alchemy DTI which can be inserted into this chain—thank you, Mark Shiffer—but the 3400’s digital output is so sloppy, the DTI can’t lock onto it.)

Out of curiosity, I took one of the Shakti Stones to my friend Al Ghiorso, electrical engineer and physicist emeritus at the Lawrence Berkeley Laboratory. Al is 86 years old and sharp as a tack; he swims for an hour almost every day, and continues to work an almost full schedule in the lab since his “retirement” 21 years ago. He is a music lover with ex- cellent hearing. (His system is an NAD 513 CD changer and matching receiver driving a pair of Klipsch cornerhorns.) I found him at his computer in his office and showed him the Shakti Stone, told him what I had heard, and let him read Ben Piazza’s white paper.

He shrugged and said, “There’s probably a grain of truth here somewhere.” Al’s a hard-core traditional engineer, and refuses to recognize an effect unless it has passed muster in plenty of well-controlled, statistically significant, double-blind studies. He wasn’t sufficiently intrigued to experiment on the Shakti—measuring its attenuation of a strong RF field, as I suggested—but he did go poking around in his laboratory for a couple of things I could try. He gave me a 6” by 8” copper sheet and a piece of Mu-metal about the same size. “See if you can get the same effect with one of these,” he told me.

A few days later I pulled the cover off the JVC and tried to duplicate the noise-damping effect of the Shakti Stones. I suspended the copper sheet above the main PCB (using AudioQuest Sorbothane feet) and grounded it to the player’s chassis with a clip lead. No change. Likewise with the Mu-metal, I also tried both of them near the power supply, but didn’t notice any sonic improvement there either. I wondered if part of the Shakti’s benefits might be due to vibration-damping of the cover on which it rested. I substituted a book of similar size and weight, but again, no luck. The same went for a small slab of marble. All my amateur trial-and-error attempts to duplicate what I hear (or, more accurately, don’t hear) with the Shakti Stones went nowhere. I’ve been sorely tempted to dissect one.

This I can tell you: The Shakti Electromagnetic Stabilizers are actually doing something to improve the sound of my system. I don’t want to go back to listening without them. What exactly they’re doing, or how exactly they’re doing it, I’m not sure. Ben Piazza, who comes across as a very down-to-earth guy, says (without giving away any company secrets) that they employ a combina- tion of multiple-node–resonance and piezoelectric effects, and some proprietary RF and microwave attenuation circuitry: “It’s a conversion of energy, really, that’s all it is. Absorption and dis- sipation.” He told me they are being used to improve the performance of everything from line conditioners (!) to electrostatic loudspeakers to phono preamps to tube power amplifiers. He also said that there may be some unforeseen applications in the medical and computer fields, and in signal transmission.

If what I’m hearing, both from my system and from other listeners, is any indication of things to come, my advice is to buy stock in Shakti Audio Innovations the day it goes public. Jonathan Scull’s endorsement in February2 was right on the mark. I give the Shakti Electromagnetic Stabilizer a big “thumbs up.”

— Barry Willis

The Critics’

2C3D – Two-Channel Three-Dimensional Hologram

The 2C3D system was the critics’ choice at the 1996 C.E.S. Show in Las Vegas! Each component has been engineered to match perfectly with the other system components. The result is a virtual re-creation of the recording space and artists, with an astounding three-dimensional holographic image.

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Spectral electronics are the foundation of the 2C3D system. The Spectral SDR 2000 Professional Processor with HDCD, DMC 20 Series 2 Reference Pre-Amp and DMA 180 high-current Reference Amplifier are featured. MIT and Avalon Acoustics have engineered component and speaker interfaces and loudspeakers to match and fully exploit Spectral’s high resolution performance capability. This approach has yielded remarkable results. Spectral’s musical resolution, stunning clarity and sheer musicality are in full evidence in the 2C3D system. This total system approach contributes significantly to advancing the art of musical reproduction.
Using the Spectral and Avalon products as building blocks, Bruce Brisson designed an interface to complete a system capable of creating a room filling holographic image. The result is the MIT\textsuperscript{\textregistered} MH-850\textsuperscript{TM} CVTerminator\textsuperscript{TM} Tri-Wire (Avalon version), with multiple Terminator networks, each specific to a particular frequency range. Paired with MI-350\textsuperscript{TM} Reference interconnect throughout, this set-up is the ultimate in linearity and phase coherence – MIT calls it "Stable Image Technology". Beneath it all, MIT's Z-Series\textsuperscript{TM} provides the AC line treatment that is the foundation of this remarkable system. Even the most experienced listeners will be unprepared for the level of sonic improvement these MIT Reference level components bring to an already excellent system.

Music lovers and critics are praising the 2C3D system. Stereophile's, Robert Harley (Jan. '96, Vol. 19, No. 1) said, "The system's resolution, transparency and sound-staging set new standards in reproduced music... I found it the most musically compelling and engaging system I've had in my home."

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Special thanks to Art Noxin and Chris Klein at ASC.

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In February 1893 Tchaikovsky wrote to his nephew, Vladimir David, that he was working on a new symphony with such ardor that he had sketched the first movement in four days, and outlined the rest as well. It had a program “of a kind that will remain an enigma to all... let them guess, [it] will just be called ‘Program Symphony No.6’... This is saturated with subjective feeling... often, while composing it in my mind, I shed many tears.”

After the premiere, which Tchaikovsky conducted on October 28 of that year in St. Petersburg, his youngest brother, Modest, suggested the title “Patetichesky,” which in Russian means “1) enthusiastic, passionate; 2) emotional; 3) bombastic.” Tchaikovsky liked this title and wrote it on the score he sent his long-time publisher and friend, Pyotr Ivanovich Jurgenson. Two days later, however, he changed his mind and instructed that the work appear simply as “Symphony No.6,” with a dedication to his nephew.

But Tchaikovsky died November 6, and Jurgenson — realizing the commercial value of a descriptive title — published it as “Symphonie Pathétique.” (French was not only the international language of diplomacy, it was also the de facto first language of the Russian aristocracy.) But “Pathétique” was a mis-translation of patetichesky. Translated into English, the meaning became “pathetic, arousing pity”... a meaning far removed from Modest Tchaikovsky’s original suggestion, which Pyotr Ilich had promptly endorsed, even if he did later change his mind.

Whatever its subtitle, his Sixth Symphony turned out to be Tchaikovsky’s final work — an emotional blockbuster that plumbs the depths of despair and hopelessness. He felt the Symphony to be his best work, “the most sincere of all of my compositions...I love it as I have never loved any of my musical children.” The premiere was generally
Tchaikovsky called the Pathétique "the most sincere of all of my compositions."

Provided low strings accompany a soft bassoon solo. At measure 13, the tempo changes to Allegro non troppo for 70 bars, culminating in a climax before quieting to Andante, after which violins introduce the theme everyone knows—one of Tchaikovsky's greatest melodies. This is restated and expanded, ending in a whispered, almost inaudible, descending passage for clarinet, the last four notes played by bassoon and marked pppppppp.

The development section, Allegro vivace, begins violently about 10 minutes into the movement. The mood is starkly tragic and despairing for 151 measures, until another powerful emotional climax is followed by hushed desolation. Following the return of the "big tune" comes a short, quiet coda.

The second movement is a "limping" waltz in 5/4 rather than 3/4 or 6/8 time. The Song sections are wistful overall, whereas the Trio hints at melancholy. Again, the ending is quiet.

Rather than a scherzo, the "Pathétique" has a rousing, ultimately frenetic March marked Allegro molto vivace, whose cathartic climax almost invariably draws applause in live performances.

The finale, marked Adagio lamentoso, has encouraged some to characterize the Symphony as a "musical suicide letter." The movement begins with sobbing strings that build to a hugely sad, crushing climax, before introducing a quietly impassioned new theme—the very essence of hopeless despair. At its climax the two parts come close together in the entire score, written to sustain over four bars. The denouement is bleak, and the Symphony ends as it began, in gloom, with a single murmuring bassoon over low strings.

The dozens of recordings currently listed in Schmutz Opus attest to the universal popularity of the "Pathétique." Faced with the prospect of commenting on so many performances in such a limited space, I decided not to discuss every one of these recordings individually. Performances listed on the accompanying chart but not mentioned in the text are omitted because they proved seriously inadequate or insignificant in ways musical or sonic or both. A number of "historic" performances in primitive sonics are discussed, however—some of those are fascinating, with an individuality and personality missing from most of the newer, better-recorded ones. Some contemporary conductors seem to feel that enough emotion is already inherent in the music, that they need only "play the notes." Having enjoyed many interpretations with convincing, imaginative points of view, I disagree.

As one might also expect with so many recordings, a large number are quite similar—fine orchestras, able conductors, sonically worthy; generally speaking, there's little to choose among them. The focus of this article is on the more recommendable versions.

The accompanying chart makes no claims for completeness. Also, as classical reissue series continue to proliferate, some performances may now have label and catalog numbers different from those listed; others may be difficult to obtain.

Five performances conducted by Herbert von Karajan have appeared on CD. The earliest, from 1939, is a rather timid

### Tchaikovsky's Symphony 6 on CD

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interpretation that tends toward a dependence on *portamento* (sliding from one pitch to another) for the most part absent from his later recordings. The next, with the Vienna Philharmonic from 1948, is a more committed reading than the first but with too little attention to Tchaikovsky’s trumpet writing in the first-movement development and in the March (none of Karajan’s recordings stress this important brass punctuation). A 1955/56 version with the Philharmonia enjoys better sonics, but is only a stopping point en route to his finest “Pathétique,” recorded with the Berlin Philharmonic in 1976. This performance is dynamic in the extreme, yet totally sensitive to the tender first-movement theme. The orchestra plays superbly, and the wide-range analog sound has been beautifully transferred to CD. Karajan’s last recording—the soundtrack of a Telemundial video production with the VPO—is not as dynamic as the 1976 Berlin performance, and its sonics suggest a multitude of microphones. Balances are skewed, with the close-up miking preserving extraneous sounds.

Wilhelm Furtwängler’s 1938 “Pathétique” is magnificent, a monumental conception whose grandeur and powerful impact remain undiminished after nearly 60 years. His generally leisurely tempos are far from the histrionics of many other conductors, yet their pulsations make them totally convincing throughout. All of the current CD transfers are acceptable. While EMI’s is best, it’s available only in a 4-CD set; luckily, Biddulph and Historical Performers are also fine.

Fritz Reiner’s 1957 recording set a technical and interpretive standard that later Chicago Symphony recordings have not equaled. This precise but comparatively cool reading is magnificently played in a warm Orchestra Hall acoustic that complements its rich, classic approach. Claudio Abbado’s 1986 version for CBS has a broad sound (with the obvious addition of rebrever), but is not always on the virtuosic level one expects from Chicago; nor could it be called an emotional interpretation. Abbado’s 1974 recording with the Vienna Philharmonic is altogether more involved and expressive, with excellent sound, and is particularly attractive at budget price.

Sir Georg Solti’s 1976 Chicago recording is a high-energy version typical of much of his work. Although the orchestra’s quality can be amazing, somewhere along the line Tchaikovsky’s emotions have disappeared, and the sound is harsh and unyielding. James Levine’s 1984 Chicago recording for RCA is another high-powered performance, immaculately played but interpretively no more persuasive than Solti’s, with somewhat strident sonics.

In Cleveland, Christoph von Dohnányi has little rapport with Tchaikovsky’s idiom; his “Pathétique” is rigid and unmotional, notable only for superb playing and spectacular Telarc sound. Loren Maazel’s 1981 version with the same orchestra was not as well recorded by CBS; it reveals less temperament than his 1964 version with the Vienna Philharmonic, in which he and that marvelous orchestra offer a highly dramatic reading with many thrilling moments, abetted by fine production from John Culshaw and Erik Smith.

Willem Mengelberg recorded the “Pathétique” twice for Telefunken, both performances enormously interesting, if with little difference between the two other than a 1941 version with better-defined sonics and a finale: 1:20 longer than the 1937 version. Mengelberg’s reading is wilful almost to the point of aberration. His control was fantastic, likewise the response of the Concertgebouw Orchestra; seldom does one hear more than a few bars in the same tempo. In my own view, his use of *portamento* for expressive purposes is highly effective, but his drastic slowdown of the last four, smacking chords in the March does not convince. While both CD transfers of the 1937 version are good, the Music & Arts sounds slightly

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better. The 1941 performance is available only from Archive Documents in London in a fine, albeit filtered, transfer. (ADCD 108, from AAD. Archive Documents, 5A Norfolk Place, London W2 1QN, England, UK.)

I have always found Yuri Temirkanov a high expressive conductor, almost a clone of Mengelberg; his readings are filled with insight and imagination, and some mannerisms that I find convincing. Both of his fairly recent recordings of the "Pathétique"—with the Royal Philharmonic in 1990, and the St. Petersburg Philharmonic in 1992—are models of elastic phrasing, capturing the music's tenderness as well as its fury; unfortunately, the sonic quality of both recordings is substandard, with undefined bass and lacking string sonority.

Bernard Haitink's 1978 Royal Concertgebouw recording is a beauty—musically solid, understated but grandly played, and, in its own cool way, satisfying. By contrast, Semyon Bychkov's 1987 recording with the same orchestra is a reading that misses the scope of the music and is spoiled by strange balances, congested climaxes, and evinces little of the Concertgebouw's famous sound.

The "Pathétique" was a major part of Paul van Kempen's 1951 Tchaikovsky series with Concertgebouw forces—an incredibly vivid, intensely dramatic reading with a constant infusion of urgency; the March in particular is hair-raising. The original Epic LP of the early '50s had overly bright, bass-heavy sound; the CD transfer seems to heighten stridency, but this remains a performance Tchaikovskians won't want to miss.

Serge Koussevitzky's 1930 recording with the Boston Symphony for RCA most beautifully conveys the opulent sound of that orchestra during his tenure: powerful and sonorous, altogether different from the lighter BSO sound of the past four decades. Koussevitzky's was a passionate performance, wonderfully played except for a major brass bobble 2:10 into the finale, which should have been remade. Still, overall this is superior to Charles Munch's 1962 version with its coarse engineering, brittle-sounding trumpets, limited dynamic range, and lack of bass, with the French conductor showing little empathy for Tchaikovsky. The finest Boston "Pathétique" was Pierre Monteux's, recorded for RCA in 1955—a straightforward, unemotive reading better recorded than Munch's later one.

The death in 1963 of Hungarian conductor Ferenc Fricsay at age 49 was a major loss. His live performance of the "Pathétique" in 1960 with the Bavarian RSO is dramatically compelling, full of anguish, expertly played, and recorded in well-balanced mono sound. It's worth investigating despite six missing bars at the start. A Fricsay recording with the Berlin Philharmonic for DG has yet to be reissued in the US.

Leonard Bernstein's 1964 CBS recording with the New York Philharmonic was actually his second one with the orchestra; they had already recorded it for American Decca, with the NYP billed by its summer-season appellation, the "Symphony Orchestra of New York." Bernstein was both passionate and compelling in his 1964 recording, which has superb reproduction, a result of recording in Manhattan Center.

BERNSTEIN'S 1986 FINALE IS ALMOST TWICE AS LONG AS ANY OTHER, BUT HIS INTERPRETIVE CHOICES ARE ENTIRELY CONVINCING.

Bernstein's 1986 recording, also with the NYP, was a revelation for some listeners, an abomination for others. It is the longest "Pathétique" ever recorded, lasting just slightly under an hour; each movement is uniquely slow, the finale in particular almost twice as long (17:12) as any other. But I find Bernstein's interpretive choices entirely convincing as they plumb the nadir of despair in sad acceptance of the inevitable. Bernstein's use of timpani at the end of the first-movement development section is both extraordinary and appropriate. The live recording captures much detail, but the dry acoustics of Avery Fisher Hall project an unflattering sonic picture.

Eugene Ormandy's several Philadelphia recordings varied considerably as his readings grew more superficial with the passing years; even with his Rolls-Royce of an orchestra in top form, he seldom suggested the true tragedy in Tchaikovsky's music. Finest of their three on CD is the CBS of 1960, far better reproduced than a shallow-sounding RCA version of eight years later. Delos's 1981 digital recording, though it found Ormandy in a more expansive mood, accurately and unflatteringly replicates the dry acoustics of the venerable Academy of Music venue.

Hermann Abendroth's 1952 mono version with the Leipzig Gewandhaus Orchestra is a noble reading of great power with carefully balanced textures, burnished brass, and eerie rubato in the first-movement development that I especially enjoy. Despite its age, the recording sounds fine. Kurt Masur's 1987 Teldec CD with the same orchestra is not in the same class interpretively (few are), being comparatively bland and low in tension, although very well recorded.

Of Arturo Toscanini's three performances on disc there's no question which is best interpretively: his 1942 recording with the Philharmonia Orchestra. At 42:33, this is the second-quickest of all extant recordings, yet it never sounds rushed. The orchestra plays as if possessed, and tension remains high throughout. Well-balanced mono sound mirrors this extraordinary interpretation, one of the truly great "Pathétiques" on record. Later Toscanini performances were more expansive. The 1947 RCA version is marred by dessicated Studio 8-H sound. A 1954 live performance in Carnegie Hall has much better sound and is quite electrifying despite a few moments of imprecise ensemble; of the two CD versions available, Melodram's is preferable if only because it includes a spectacular performance of Tchaikovsky's Piano Concerto 1 with Vladimir Horowitz.

Only the staunchest admirers of Otto Klemperer will enjoy his 1961 Sixth—a gratuitously literal and leisurely dissection that entirely misses the composer's expressive outpouring. Carlo Maria Giulini's 1959 Philharmonia account is musically sound and satisfying, if stolid. His 1981 remake, however, emphasizes detail over substance—a boring performance even though timpani are powerful at the close of the first-movement development in this sonically excellent, early digital recording. Riccardo Muti's 1979 Philharmonia version is highly recommended if you can accept the sound; this performance is dynamic where it ought to be, with an outstanding March and a consistent sense of involvement. Regrettably, the CD transfer has lost much of the original recording's warmth.

Giuseppe Sinopoli can usually be counted on to bring a different slant to familiar repertory, and his "Pathétique" is no exception—slow and thought-provoking, with many imaginative touches. He perfectly balances wind and brass chords in the middle of the first-movement development, achieving an effect of delirium. Sadly, the recording emanates from All Saint's Toot-

Stereophile, April 1996 277
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ing, where engineers could not control the massive reverberation or give an edge to the brass sound.

Yevgeny Mravinsky made several recordings of the “Pathétique,” all of them variously distinguished and each a major listening experience. An early mono version for DG was powerfully dramatic, but has not yet been reissued in the US. The 1960 stereo remake is rightly considered a classic performance—a sharply profiled interpretation of fierce energy, always intense, with a grand sweep that is gripping. The Leningrad Philharmonic is outstanding in all of the Mravinsky studio recordings, as they are in two later live recordings on CD, with little to choose between them. The 1978 on Originals is a shade more understated than the stunning 1982 version on Erato, the latter a digital recording of tremendous impact.

Antal Dorati’s 1960 London Symphony recording was a product of the conductor’s finest period. He gives an urgent performance that is perhaps short on emotion but is beautifully played, and many will enjoy the classic Mercury Living Presence sound. Jascha Horenstein’s LSO recording of seven years later is distinguished by thrusting trumpets in the first-movement development; it is overall a reading of power and very well recorded. Alexander Gibson’s 1959 recording for Reader’s Digest is uneventful, but many may wish to have it just for the natural sound produced by the Charles Gerhardt/Kenneth Wilkinson team in an immaculate Chekys CD transfer. Charles Dutoit’s Montréal recording has the quality we have come to expect from these forces and is splendidly recorded by London, but lacks involvement or excitement.

A primary contender is Vladimir Ashkenazy’s 1979 Philharmonia recording, made at the beginning of his conducting career. Details are carefully molded, there is power and passion, and the performance benefits from the warm acoustic of Kingsway Hall, brightened a touch by the transfer to CD. Mariss Jansons’s Oslo Philharmonic recording on Chandos has been highly touted, and rightfully so. The Oslo orchestra outdoes itself in a brilliant performance, conveying Jansons’s highly expressive interpretation with energy and tonal beauty. One would never suspect, though, that Jansons was closely associated with Mravinsky in Leningrad, so different are their performances.

Of great interest is the 1945 National Symphony Orchestra performance conducted by Albert Coates (one of the leading conductors at the turn of the century) and beautifully recorded in Kingsway Hall by a very young Kenneth Wilkinson. America’s National Symphony can be heard in an emotional performance led by Mstislav Rostropovich in 1990 on the occasion of his return to his native country after 16 years of exile. The orchestra is superb, the engineering excellent. This is superior to Rostropovich’s 1976 London Philharmonic recording, just now reissued in a five-CD set. The earlier version is high on passion, rather low on precision, and harsh-sounding for a Kingsway Hall recording.

KONDRIASHIN’S 1978 LIVE RECORDING WITH THE MOSCOW PHILHARMONIC IS TRULY EXCITING, WITH VIVIDLY RECORDED BRASS.

Ever since its release, Mikhail Pletnev’s recording with the newly formed Russian National Orchestra has been highly praised, and deservedly so. The March is especially outstanding; the only problem is with the sound, which is distant and lacking in impact. I look forward to the remake on DG, part of a projected Tchaikovsky Symphonies cycle.

Of Gennady Rozhdestvensky’s two recordings the better is undoubtedly the live performance with the Moscow Radio Orchestra recorded in 1966 in Royal Albert Hall. This dramatic interpretation has a sense of occasion and is very well played and recorded, with a huge, very reverberent sound, as well as intermittent but not too intrusive hum. Rozhdestvensky, unfortunately, does not handle audience applause at the end of the March very well—he begins the finale during the applause, destroying the final movement’s mood completely. Still, this performance is preferable to his prosaic, rather sloppy recording with the LSO.

Yevgeny Svetlanov’s 1959 Melodiya recording, issued on budget Vox, is admirable, truly “Russian” in sound, sustaining interest throughout, and recorded with typical Melodiya sonics of the time: big, rich, overly bright, and somewhat undefined in the bass. Kirill Kondrashin’s 1978 live recording with the Moscow Philharmonic is overall quite similar, a truly exciting listening experience—and what a pleasure it is to hear brass so vividly recorded, even if the bass is boomy and undefined.

I find puzzling the almost legendary status of Guido Cantelli’s 1953 live performance with the NBC Symphony in Carnegie Hall. This is a very clear, unemotional account, with engineering that makes the orchestra sound undernourished. The AS Disc transfer is the better of the two available.

Vladimir Fedoseyev’s 1981 recording with the USSR Radio Orchestra boasts typically Russian sound—bright brass and rich strings—in a sometimes frantic reading. The sound is surprisingly constricted for an early digital recording, and the engineers have opted for a distant sonic perspective.

Igor Markevitch’s 1962 Philips recording is another early recording that continues to impress. The LSO was in top shape during that period and responds enthusiastically to Markevitch’s vivid approach. The CD transfer improves the original fine sound, and at budget price this is a super-bargain.

A curiosity is Tchaikovsky’s own version of the “Pathétique” for piano duet. Though it necessarily lacks the dynamics and textures of the orchestral version, this reduction is intriguing on its own terms, and very well performed in a recording by Duo Cronimelych. This is the shortest performance of all; the long, sustained lines of the orchestral performance do not exist here.

Even with all of the recordings mentioned, these are only the most notable of those currently in print. Others, long unavailable, are worthy of reissue: Jean Martinon made a fine London LP (STS 15018, nla) with the Vienna Philharmonic. There is a dynamic live performance with David Oistrakh conducting the Moscow Philharmonic in 1968 on the occasion of Oistrakh’s 60th birthday (Angel Melodiya SR 4112, nla, and Musical Heritage Society MHS 824624, nla). Artur Rodzinski and the Philharmonic Symphony Orchestra of London made a spectacular monophonic recording in the mid-50s for Westminster (WMS 1020, LP, nla). This is one of the best ever, never issued on CD.

Which to get? Those who love this score surely should hear the Furtwängler, Mengelberg, Toscanini/Philadelphia, Bernstein 1986, Karajan 1976, and Van Kempen versions. Among more modern recordings I would choose Ashkenazy, Maazel/Vienna, Markovitch, or Mravinsky 1982—with a special nod to Abbado/Vienna, especially attractive at budget price.
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These new albums are both led by their bass players, and both are quintessential paradigms of their respective genres. Dave Holland invents a new genre and Art Davis perfects an old one.

In jazz, the primary role of the bass is to mark the beat. To justify an entire solo album, a bassist must be more than a technical virtuoso. He must be a singer touched with a grace that transcends the limitations of his instrument’s voice. Dave Holland is such a singer. He commands an intonation so rich and exact, and has such astonishing speed, that by the first track (“Homecoming”) you’ve lost the sense that there’s anything foreign about Holland’s chosen language. The third song, “Goodbye Porkpie Hat,” is one of the permanent eulogies in the jazz canon. It was written in 1959, on the day Lester Young died, by another great bass player, Charles Mingus. Holland quakes the famous theme, then meditates over it like the slowest of prayers, every note’s long vibrato a mourning for a tragedy sustained by us all.

John Coltrane’s “Mr. P.C.” is a line that hundreds of horn players have used as a basis for blowing. Holland propels it ever onward at the bottom, but on top he runs the changes with complex variations, and no saxophone ever blew it better. The last piece, “God Bless The Child,” stays faithful to Billie Holiday’s melody. Yet Holland gets closer to the song’s spiritual truth than any singer but one: the composer herself.

*Ones All* was recorded with a single AKG stereo tube microphone. Engineer James Farber is not interested in providing a demonstration record almost as rare: a small-group studio session magically lit from within by inspiration, from first note to last. The feeling of heightened creativity is supported by an unforgettable sonic portrait of an acoustic jazz ensemble: crystalline yet palpable, precisely etched yet warm.

Art Davis — master bassist, Ph.D. (in clinical psychology), and keeper of the flame — has assembled a world-class cross-generational quartet. There are floating atmospheres like Billy Strayhorn’s “A Flower is a Lovesome Thing,” and there are anthems like John Coltrane’s “Olé” which gather like a storm and provoke John’s son Ravi to rain torrents of passion from his soprano saxophone. Herbie Hancock (on a sonorous 1940s-era Steinway) does something unexpected on every tune, comping and filling like pinpoints of light, paying out solos like cascades of poetry. But the revelation of *A Time Remembered* is Ravi Coltrane. He shapes endless ideas to lyrical elegance, even on the fly. Listen to his subtle permutations of Cole Porter’s “Ev’ry Time We Say Goodbye,” and to the way he slides off Monk’s “Evidence” yet still comes down on the accents.

The CD is so good that the sonic advantages of the LP do not make it worth losing 24 minutes of great music, not to mention enduring the outrageous inconvenience of vinyl. But for you ‘philes in your hair shirts, your narrator, a CD collector, will cop to it: the LP has a little more sweetness and air when Smith’s brushes strike his cymbals.

— Thomas Conrad
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Stereophile, April 1996
J.S. Bach never hesitated to transcribe, adapt, or even totally rework his compositions. His reasons were usually pragmatic: the original performers were no longer available, a patron needed something for specific instruments and needed it in a hurry, etc. Less often, Bach would alter or expand previous works for purely musical reasons. Like many 18th-century composers, he would also use pieces by other composers, such as Vivaldi, as the basis for more ambitious works of his own. Given this, it would be churlish to criticize the Russian violinist Dmitry Sitkovetsky for his orchestral expansion of Bach’s famous suite of variations for keyboard, especially since the result works rather better than it ought to.

I have listened to the Goldberg rather more than I would like over the past few years: recordings come thicker and faster than they ought. It’s true that many of the performers on these discs bring a genuine individual viewpoint to bear on the music, but after a while even critical detachment begins to pall. Sitkovetsky’s version thus comes as a bit of fresh air. He finds in the Goldbergs a good deal of melancholy, and rather more drama than I might have expected. His orchestration is not perfectly Baroque, but it is extremely sympathetic and revealing. There is a pleasant deal of variety in his writing, and as conductor, he chooses his tempos well. If his motivation here is no more than his own desire to play the Goldberg Variations for himself, on his own instrument, then so be it; if, independent of such desires, he saw the opportunity to say something interesting, then more power to him. This disc makes a fine argument for either possibility.

The recording quality here is no better than decent, but no worse either. There is mostly good balance between the strings, but the harpsichord continuo is not sufficiently prominent, and the sound of the keyboard instrument is diffuse and not terribly transparent. Strongly recommended to admirers of Bach in any event. — Les Berkley

Is Bruckner’s expansive quintet a “symphony in disguise,” as Constantin Floros phrases it in the Sony notes? This brace of discs tests both sides of the argument.

Bruckner’s chamber music may seem an odd assignment for L’Archibudelli, a historical-instrument ensemble, but gut strings are hardly out of place in early Romantic music. In the event, their narrow vibrato is an advantage in clarifying the denser chromatic writing; their tone is gratifyingly firm, and they meet the various technical hurdles fearlessly and accurately. Their spacious, long-lined quintet performance flows apparently effortlessly through the indicated tempo adjustments as well as the knotty scan- sion of the Finale’s first “tutti,” while finding plenty of character in detail, as in the Trio’s “flickering” accompaniment figures, or the Bach-like solemnity of parts of the Adagio. In this expertly balanced, flexible, committed presentation, the chamber scale doesn’t confine the music, serving instead to illustrate the importance of a chamber-like interplay in the symphonies as well.

The rest of the program is similarly well-played. The amiable quartet which, along with the pleasantly ephemeral Rondo, Bruckner composed as exercises during his studies with Otto Kitzler in Linz, shows little sign of the mature composer. Its overall melodic gentleness belies the commonly cited model of Beethoven — the middle movements suggest Haydn filtered through Schubert — while the first movement, with its mournful minor-key invocations, could be mistaken for one of the minor Russians! The Intermezzo, composed for the Quintet, was replaced by the superior Scherzo; L’Archibudelli treat it as a stately, formal minuet. (The booklet incorrectly indicates that the Trio, identical to that of the Scherzo, plays here as well; since it isn’t tracked separately, you can’t program it to do so.) Sony’s recording is excellent.

The Orfeo release makes a strong case for performing the quintet with a full string body. The climaxes easily expand into a “symphonic” majesty and breadth, while the intonation difficulties presented by the first-movement development (where even L’Archibudelli are mildly suspect) and the octave passages are more easily solved. The cultivated, sweet-toned Bamberg strings supply the needed variety of spirit and articulation. Lohar Zagrosek shapes the piece musically if squarely, the latter most noticeably in the evenly stressed detached passages; this carries over into the Schönberg, where even the soloists sound a bit reserved. The clearly focused sound, with a mildly ambient bloom, is a welcome improvement on the overresonant grey monochrome of Orfeo’s initial releases.

— Stephen Francis Vasta

Here’s the story: The second- (or third-) rate writer Catulle Mendez put together a libretto based on the life of El Cid and attempted to engage the interest and complicity of composers of the caliber and reputation of Gounod, Thomas, and Saint-Saëns. When that apparently failed, he went to the young, poor Claude Debussy and promised him that the opera which would result from Debussy’s setting of his (wretched) text would be produced at the Opéra — a promise built on sand. After some initial composition, Debussy realized how poorly constructed and written the libretto was and finally gave up, eventually claiming that he had destroyed the manuscript. In fact, the score survived in part — an almost complete out-
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line. The present recording represents a reconstruction, orchestration, and occasional addition by Richard Langham Smith and Edison Denisov.

But neither avid Debussians nor opera-lovers need get too excited. Despite an incandescently lovely prelude and an equally captivating love duet in Act I, and a second-act introduction which could be by no one else, this tends to sound like generic late-19th-century Romantic French music—not bad, if you weren't hoping for something with more Pelleas-like music. Perhaps Debussy's objection to the text hampered his inspiration, or perhaps in 1890 Debussy was not yet Debussy. There arearias, duets, and choruses, but rarely do they make the senses tingle or the pulse quicken; the drama comes to life only sporadically.

I'm not, however, dismissing it. The performance is wonderful, with Brown and Dale as an ideally cast pair of lovers and the others of a similarly high quality. Nagano leads what one can assume is a near-definitive account of the score, and the recording is excellent—warm, realistic, and clean. Of course, this is for specialists—the prospect of fans of Bohème, Tristan, Fidgi, or Canno coming upon this as "another opera" is terrifying: There’s practically no "there" here. But Debussy completists and curious collectors will need it and will get out of it what it has to offer: a glimpse of the early dissatisfactions of a great composer.

—Robert Levine

DURUFLE: Requiem, Motet "Cum Jubilo," Notre Père

Patrick Spencer, mezzo; Mark Bleeke, tenor; François Le Roux, baritone; Voices of Ascension Chorus & Orchestra; Dennis Keene

Delos DE 3169 (CD only). Bejun Mehta, Ramiro Belgardt, prod.; Stephen Basil, eng. DDD. TT: 61:51

Durufle’s art was centered on his service to the Roman Catholic Church and yielded only 13 published works. For a composer who died just in 1996, his style seems hopelessly conservative — the closest parallel is Fauré—but his music is expertly crafted and sensual in the best French tradition. This recording by New York–based musicians is excellent, revealing the close association conductor Dennis Keene has had with Durufle’s music. In particular, the choral sound of his Voices of Ascension Chorus, a professional group numbering about 55, represents the finest in American choral music. Delos’s sonics are wonderfully vivid. Heartily recommended.

—Paul L. Althouse

HANDEL: Israel in Egypt

With two Coronation Anthems: "Zadok the Priest," "The King Shall Rejoice"

John Eliot Gardiner, Monteverdi Choir, English Baroque Soloists

Philips 432 110-2 (2 CD’s only). Wilhelm Hellweg, prod.; Stan Tadl, eng. DDD. TT: 103:07

Israel in Egypt is generally accepted as Handel’s second-most-popular oratorio after Messiah, but it had no particular success in his own day. The premiere did not fill the house, in part because the London public expected operatic solos, and Israel is almost entirely choral. For the second performance Handel announced the piece would be “shortened and intermixed with songs.” The work was revived a few times in succeeding years, but never reached the popularity of several other oratorios. Today we see it as one of Handel’s most wonderful works for chorus, even if it’s seldom heard due to its difficulty and requirement of eight parts.

Gardiner recorded Israel in Egypt in the late ’70s in a version still available (Erato 45399-2). Even at this early date, Gardiner elicited the nuance and crisp choral articulation that have characterized his work ever since. This new Israel, recorded in 1990, is no less fine. Virtuoso numbers like the “horse and his rider” sections are simply splendid, and the quiet, atmospheric moments (“He sent a thick darkness”) are beautifully controlled. The orchestral contribution is equally strong—just listen to the exciting, precise string playing depicting “all manner of flies.”

Since the work is so heavily choral, conductors frequently draw their soloists from the choir. So does Gardiner, with only passable results. Duets like “The Lord is my strength” for two sopranos and “The Lord is a man of war” for two bases are underproject-

ed. This level of singing would not cause alarm in a concert (the source of this recording), but we expect better in a permanent document. The two Coronation Anthems are as lively and well-done as anyone would hope, though it’s easier to imagine the pomp and splendor of coronation with a larger choir.

Sonatas are clear and well-balanced, with a studio ambience. Heartily recommended if you don’t mind the amateurish soloists. Otherwise, Andrew Parrott’s version on Angel CDCB 54018 would be a safer choice.

—Paul L. Althouse

MARTLAND: Patrol, Danceworks, Principia

Smith Quartet; Steve Martland, The Steve Martland Band

Catalyst 62670-2 (CD only). Steve Martland, prod.; Calum Malcolm, prod., eng. DDD. TT: 57:37

Steve Martland’s minimalist scoring is driven by the rhythmic intensity and exhilaration of rock and jazz while incorporating features common to music of the Medieval, Renaissance, and Baroque periods. His 30-minute-long piece for string quartet, Patrol, for instance, is named after that genre of Scottish folk fiddling that, in imitating tunes performed by such forces as military marching bands, subtly alters their melodies and rhythms; it is on this type of “mis-memorization” that the piece is founded. But Martland also uses the techniques of hocket, where rests are introduced between notes of a melody and pass between instruments, isorhythms, and the ground bass so prevalent on Purcell’s 17th-century fantasias. Here, the Smith Quartet give a compelling and technically assured performance for this first recording.

Danceworks, which also receives its premiere recording here, was commissioned by the London Contemporary Dance Theater in 1993. It is a lively piece comprising four dances of roughly similar tempos but of widely differing rhythms. Various members of the line-up of saxophones, brass, violin, piano, guitars, and drums also feature more heavily in one dance than another.

The three-minute-long Principia, also for Steve Martland’s Band, is a marvelous miniature of great energy; although based on only two chords, its interest and vitality derive from Martland’s unmistakable rhythmic potency. This is a great disc that will continue to grow on you.

—Barbara Jahn
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Although these performances may not appeal to all tastes, they are, nonetheless, commanding. Without exaggeration and with an aptly limited tonal range that suggests (without duplicating) the comparatively limited sonority of Mozart's fortepiano, Zacharias conveys the drama and wide emotional range that lie at the core of these works while preserving their Classical framework.

Tempo in outer movements are bracing, suggesting the Sturm und Drang ethos of 20 and the festive pompi of 21, and both slow movements are taken at relatively fast tempos, stripping them of even a hint of sentimentality. Certainly the Andante of 21 in this performance is a far cry from the Elbiva Madiger smalchalz imposed on the movement in recent years. And throughout both works, expression is heightened by the pianist's flexible rhythm, the first-movement development of 21 being a prime case in point.

In this work, by the way, Zacharias provides several instances of tasteful improvisation at points where they are most needed. And in both works he displays impressive technique, left-hand passages always in focus, scales articulated with immaculate clarity.

Mozart left no cadenzas for these scores, and Zacharias supplies his own. All are stylish, but there is one bizarre moment in his cadenza for the finale of 20 where the solo is interrupted by the D-minor orchestral chord that begins the overture to Don Giovanni, as heard on a scratchy 78rpm disc. So far as I can make out from the poorly written annotations, this has been done at Zacharias's specification. Clearly here is a case of the tail of the medium wagging the musical dog.

In all other respects, however, this is an impressive release, one that benefits from superb accompaniment provided by Zinnman and from intimate, well-focused sound.

— Mortimer H. Frank

MOZART: Piano Concertos 20 & 21
Christian Zacharias, piano; David Zinnman, Bayreuth Radio Orchestra
EMI 49899 (CD only). Gerd Berg, Theodor Holtzinger, prod.; Gerhard von Kobbeldorff, eng. DDJ3. TT: 58:28

REGIER: Complete String Quartets
String Quartets (6) in D (for open strings); in g and A, Op.24 Nos.1 & 2 in d, Op.74; in E-Flat, Op.109; in F-sharp, Op.121

Bern String Quartet
CF9 990 006-2 (3 CD only). Burkhard Schumigun, Christiane Nicoler, prod.; Charles Suter, eng. editing. DDJ3. TT: 3:21:04

Of the many contradictions embodied by Max Regier (1873–1916), the most challenging to his contemporaries and to modern listeners and players has been that, despite the fact that he was the most obsessively contrapuntal/fugal composer since J.S. Bach, his compositions almost never proceeded along the ideal Classical path of inevitable and "absolute" formal development proceeding with mathematical elegance from the germ of a few elemental themes. Instead—and particularly in the first and last movements of most of the works here—Regier tended to throw out handfuls of brief motivic fragments which he would then develop simultaneously, in his ensemble's various parts, in short bursts of dense, furious creativity. His was less an Olympian inevitability of "absolute" music than a primal, vital, Dionysian force that held as its highest imperative absolute fidelity to the heat of the compositional moment, paradoxically constrained by an awesomely informed formal discipline all Regier's own. He took Wagner's chromaticism and ran with it—like his contemporaries Mahler and Bartók, Regier's indications of these quartets' overall key signatures are often little more than nominal as they modulate more often and more fluidly than Tristan und Isolde, while never quite sounding as if they've abandoned a tonal center.

At the same time, Regier's Scherzos are full of propulsive rhythmic drive, and a brusque burlesque wit (much like the man himself) that sometimes borders on practical joking. His Adagios and Largos are lush, passionate, and organic, as intensely Romantic in the Brahmsian mold as his Scherzos are caustic fin de siècle Mahlerian, his fugues as thorny as Bach's; and his stop-start opening movements, full of turns on thematic and dynamic dimes, are as spare and barbed as the Viennese avant-garde they inspired and prefigured. (Both Schoenberg and Hindemith considered Regier a genius, and his music absolutely essential to the development of their own.)

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Sterophile, April 1996
After the entertainingly undisciplined juvenilium of the unnumbered Quartet in d (Reger adds a bass violin in the final movement), composed when Reger was 17, the dense, difficult busyness of the two Op.54 quartets seems to chronicle his struggle to conquer the almost overwhelming demands of the string quartet form; he clearly took fierce joy in the bout. The long (53:15) Op.74 Quartet is Reger’s masterpiece in the genre, by turns anguished, determined, grotesque, and profound, with a gorgeously long Andante. Op.109 evinces a mature fluidity of ideas, a greater willingness to take chances, if on a smaller scale than Op.74, but with more serene passion results—especially in the intermittently choral-like Larghetto. Reger’s last quartet, Op.121, is painted with a broader if more rigorously chromatic brush. The work is a primer in confounded expectation—the scherzo is by turns lyrical and hectoring—and is probably the most tautly organized of all of the Quartets. Its penive Adagio is reminiscent of the great slow movements of Bruckner’s last symphonies, though with far less predictable modulations.

All of which makes the almost complete absence of recordings of these rich, remarkable works inexplicable, and the Bern Quartet’s new and comprehensive recording of them all the more timely and appreciated. The only other traversal of the Quartets—by the Reger Quartet in a Vox Box recorded in the early ’70s, lacking the Quartet in d and anyway long out of print—was serviceable, and stylish enough in its small-scaled, astrigent, no-nonsense way, more like meticulously accurate schematic sketches than finished canvases.

The Bern’s accounts are true interpretations: spacious, expansive, each note played as if deeply felt, with dramatic shifts of dynamics and tempo, all in sonics far superior (if suffering from a bit of digital harshness) to Vox’s dry, boxy acoustic. Throughout, the Bern’s approach is darker, a bit slower, and more comfortably Romantic than the RQ’s, perfectly counteracting the composer’s occasional tendency to automatically equate his own trademark contrapuntal density with musical substance. And as the Bern’s ensemble playing is far superior to the RQ’s, the choice would be a simple one even if the latter were still available. For now, there’s simply no other choice, and we’re very fortunate that these performances are so uniformly excellent. Highly recommended.

Reger once wrote, “Five years after my death I shall be forgotten. Only later will my time come.” Perhaps with the Bern Quartet’s excellent work here, and Ulrike Anima-Mathe’s recent—and stunning—Dorian discs of his Sonatas for Unaccompanied Violin, Reger’s time has finally come. Here’s hoping the Bern’s set will inspire string quartets around the world to install these works as staples of a standard repertoire that has grown too dependent on a handful of universally accepted masterpieces.

—Richard Lehner

SCHUMANN: Piano Concerto
Michel Dalberto, piano; Elishu Inbal, Vienna Symphony
Decca 437-75859 (CD only). Yabishiri Kawaguchi, prod.; Hiroshi Goto, eng. £10:37

It has almost become a phonographic tradition to pair the great Schumann’s Piano Concerto with that of another 19th-century composer, often Grieg. I raise the point because Dalberto’s performance, if lacking some of the thrust and drama of others (notably Lipatti’s and Fleisher’s), is paired with two other Schumann works for piano and orchestra which serve as welcome glosses on the composer’s more familiar work. The concerto, completed in 1841, reveals Schumann at the height of his powers, whereas Op.92 (1849) and Op.134 (1853) exhibit weakened aesthetic control—the latter, in particular, meandering in a way that suggests growing mental instability. But the extraordinary imagination that produced the concerto is still evident in some of the basic material (if not in its handling), and for that alone it is worth having these two lesser works paired with the greater one.

Dalberto proves a solid performer, with a full tone that never becomes clangorous and is subtly shaded. He also displays a fine sense of pace and shape with a rhythm that is supple and conveys the Florestan-Eusebius contrasts in these works. For all his flexibility, however, he never permits the tightly organized concerto to become fragmented. Inbal offers fine support, and the only (minor) shortcoming of this release lies in its sound. The piano is very well-reproduced, but there is an airlessness around the orchestra that sounds unnatural. I have never been hostile to digital technology, but I wonder if it is the source of this shortcoming. Whatever, a fine profile of Schumann’s creative efforts over a span of a dozen years. This release is valuable.

—Mortimer H. Frank

SIBELIUS: Violin Concerto
BRUCH: Scottish Fantasy
Midori, violin; Zubin Mehta, Israel Philharmonic
Sony 58967 (CD only). Steven Epstein, prod.; Charles Harbutt, eng. £6:55

Midori has a wonderful technique at her fingertips, and this is a virtuoso performance of great control and precision. But don’t expect extreme drama or volatility in the Sibelius Concerto, for her reading is one of subtlety and immendo. Having said that, her brilliance at times is exciting, her intensity through-out deeply expressive. She is recorded with great clarity and presence, but the various sections of the orchestra in the Mann Auditorium in Tel Aviv are less well-focused and easy to place.

The coupling, Max Bruch’s beautiful Scottish Fantasy, is a pleasing one. Written in 1880 and given its first performance by Joachim the following year, this work represents the antithesis of the music of the New German School championed by Berlioz, Liszt, and Wagner at that time, fashioning itself as it does on the Scottish folk music that Bruch loved and studied assiduously. Each of its four movements has a different folk song at its heart, which Midori gives with an easy style and dеликі. This, and her wonderful control of pianissimo passages, heightens the sense of fantasy implicit in the title. The Israel PO under Mehta are sensitive to her tender fashioning of phrases and dynamics and give admirably supported control. Would that the recording could have handled this difficult acoustic better...

—Barbara Jahn

JOHANN STRAUSS: Der Zigeunerbaron (The Gypsy Baron)
Herbert Vippert, Barakay; Pamela Coburn, Saffi; Rudolf Schanchar, Zaspar; Julia Hammar, Cipria; Wolfgang Holmz-Mart, Honoway; Arnold Schoenberg Choir, Vienna Symphony, Nikolaus Hanschmork, prod; Michael Bramm, eng. £10:33. TT: 2:20:04

It may be my biased viewpoint, but isn’t there a least a mini-revival of interest in
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operatta among record companies? Telarc has released five in their Gilbert & Sullivan series; there are two new recordings of The Merry Widow (see Vol.18 No.8) and now we have a reconstructed version of The Gypsy Baron. For this one, Nikolas Harnoncourt and Norbert Lincke have pored over all the various scores that they could hunt up, including the censor's copy of the score used at the premiere. The original ordering of numbers has been reinstated, with numerous changes in vocal lines and orchestration, and there are over 40 minutes of newly discovered music. The details of the changes and additions may be of interest mostly to operetta scholars, but anyone with an affection for the genre can enjoy the results. As with John McGlinn's restoration of Show Boat, the piece seems much more complete and reaches a higher musical standard.

For those who know Strauss's operettas only through Die Fledermaus, The Gypsy Baron will be something of a surprise. It's a much more grand, more operatic piece, with a wider musical palette. Compared to The Gypsy Baron, Fledermaus comes across as a piece of fluff. To be sure, Fledermaus is an effective piece of musical theater, full of great tunes, but there's nothing in Fledermaus that comes close to the emotional intensity of the love duet from The Gypsy Baron. This is gorgeous music, unabashed in its romanticism.

Harnoncourt is not known as an operetta conductor, but during his days as an orchestral musician he often played in the orchestra of the Vienna Volksoper, so he's by no means unfamiliar with this music. His approach combines respect for tradition with a fresh look at the material in a way that I found completely engaging. Just listen to what he does with the complex amalgam of Hungarian and Viennese styles in the Overture, and you know you're in the hands of a master.

The present recording is based on a Vienna concert performance in 1994, and features singers who — apart from distinguished mezzo Julia Hamari — are more up-and-comers than stars. They all have attractive voices and sing well, especially Herbert Lippert and Daniela Coburn in the central roles. What I would have liked more of is characterization, personality, theatricality, even flamboyance. I agree with the avoidance of any sense of "sendup," but they seem to be a little too serious.

There are two competing recordings of note: the Eurodisc CD of highlights conducted by Robert Stolz (Eurodisc 258 368), and the more-or-less complete recording from the '50s conducted by Otto Ackermann (EMI CHS 69526 2, a 2-CD set available only as a special import). Stolz and Ackermann are both highly experienced operetta conductors, but, next to Harnoncourt, their efforts seem almost routine. The Eurodisc recording features Rudolf Schock as Barnikay; it's a self-indulgent, over-the-top performance, but he certainly doesn't lack personality. The EMI has the young Nicolai Gedda, Elisabeth Schwarzkopf, and Hermann Prey, all singing with freshness and total involvement. Vocally, this cast is simply unbeatable. (Gedda tosses off a perfectly placed high C at the end of Barnikay's entrance song.) The Teldec, although vocally not at that excelent level, is musically the most satisfying, and has by far the best sound quality.

—Robert Deutsch

CLASSICAL COLLECTIONS

MARIABACHMANN: Kiss on Wood

The upstart Catalyst label has proved once again that serious music of our own century doesn't have to sound like academic theory gone to hell. This is the second Catalyst collaboration between violinist Maria Bachmann and pianist Jon Kliphonoff, two musicians vibrant with talent and sensitivity. Their first, Fratres, was reviewed in Vol. 17 No. 2; this new release is just as invigorating.

Stretching from the 1920s to the '90s, the repertory starts off with the world-premiere recording of James MacMillan's Kiss on Wood. Economical — almost laconic — in means, the brief work offers plaintive legato violin lines over a piano accompaniment that is sometimes sparse, sometimes furious. The music transforms itself, literally and emotionally, from discord to consonance, finding an ineffably transcendent calm before it's done.

The Second Sonata of William Bolcom, an intriguing composer who dips into wildly heterogeneous idioms to produce inexplicably effective concoctions, is nothing less than magic as played by these musicians. Violent, quaint, solemn, and suave (yes, all that and more), the work ends with a tip of the cap to jazz violinist Joe Venuti.

Copland's Nocturne of 1928 and Alfred Schnittke's Sonata 1 of 1963 offer counterpoised moods and techniques that perhaps best exhibit the flexibility of Bachmann and Kliphonoff. The Copland, poised and affecting, is an ideal foil to the Schnittke — an approachable and often touching expressionist descendent.

Paul Dresher's Double Bac — Part 2 closes the CD in a meditative mood that is not without substance and structure. Influenced by the music of Ghana, Bali, Java, and India, Dresher's work features an intense emotional buildup that hits home, thanks to the marvelous playing.

Sonically, this recording seems to be a cut above Fratres, which was itself quite good. The lower notes of the piano on Kiss have a bit more of the sinewy character of the real thing. And the woody tone of the violin, as well as the ambience of the recording space, convey a more lifelike presence.

This release offers yet more evidence of the richness of contemporary music. In the loving hands of Bachmann and Kliphonoff, it's a compelling argument for spending more time with our ears focused on our own century.

—Robert Hesson

FREDERIC CHIU: Reflections
Harmonia Mundi HMU 907166 (CD only). Robin G. Young, prod.; Brad Michel, eng. DD: 67:30

Frederic Chiu, the American pianist (b. 1964) now residing in Paris, has made a notable impact on the pianistic scene, and his recordings have justifiably received many commendations. The Schoenberg Op.11 pieces date from 1909 and are considered to be that composer's first attempt atatonalism (they are, incidentally, played here in their early form rather than in the 1924 revision).
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However, the most fascinating contribution to Chiu's album are the four pieces—"Midnight Passes," "The Cemetery," "The Sea," and "The Alley"—making up the 1900-07 cycle Clairs de lune by the almost unknown Abel Decaux (1869-1943). A student of Massenet, Widor, and Guilmont, Decaux was also an organist and for a time taught at the Eastman School, but his music has been mostly relegated to obscurity.

The present cycle, Decaux's best-known work and what seems to represent the first available recording of any of his music, actually used serial techniques prior to Schoenberg, but the music itself is palatably impressionistic and, as performed here, impresses me as a marvelous discovery. It is skittish in character, often fretting in its sonorities (the midnight bells), but is also often full of controlled and often quiet tension. Occasionally there are curious similarities: Decaux's La Mer, for example, to Ravel's Une barque sur l'océan.

Chiu is suitably warm-toned throughout this recital, and the sounds he produces are beautifully captured. If anything disappointing, it's Chiu's emotional distance in the Ravel—his excellent technical command, his concentration on sounds, shapes, and colors, do not entirely make up for the chill found here, or the lack of sensuousness in the scores themselves. The reproduction features a bright top, with a wide range and a solid bass.

— Igor Kipnis

BOBBY MCFERRIN: Paper Music
Sony Classical SK 46400 (C1 only). Steven Epstein, prod. D110. TT: 60:30

THE SWINGLE SINGERS: 1812

Although these two anthologies are in no way related as to repertoire or perhaps even intent except to entertain, there is a connection in that both involve voice and arrangement. The multi-talented Bobby McFerrin, who holds the position of Creative Chair of the St. Paul Chamber Orchestra and Bobby McFerrin goes Classical with the St. Paul Chamber Orchestra on Paper Music. Mr. Kipnis is impressed.

who has become increasingly active as a conductor of classical music, directs a number of well-chosen Mozart, Stravinsky, and Mendelssohn pieces, all of which are well played and reveal McFerrin's exceptional musicality if not always subtlety of orchestral balance (the Marriage of Figaro Overture is a bit heavy-handed in the bass).

Adding his own vocalizations in place of a solo instrument, McFerrin offers what some might take as idiosyncratic versions of the familiar Boccherini Minuet, the Fauré Pavane, one of the cello parts of a Vivaldi Double Cello Concerto, the violin solo from the first movement of Bach's A-Minor Concerto, and the cello part from Tchaikovsky's Andante cantabile. I found McFerrin's astonishingly accurate intonation, almost unnoticed breathing (does he ever?), and sensitivity to the instrumental/vocal line quite remarkable. Some may object to what he does as unwelcome crooning; I prefer to think of it as a different way of looking at the score. Possibly, because of his popularity, he will by this means be able to introduce some classical music to otherwise uninterested listeners—not altogether a bad thing. All in all, this is a good first conducting effort, as well as an entertaining and novel concept. The reproduction is generally satisfactory, though there understandably is a difference in aural perspective between the orchestra and the vocal additions, which were done in a different location.

The Swingle Singers have, of course, been around a very long time with their scintillating arrangements, and the group, now under the direction of Jonathan Rathbone, has put together an excellent mix of classical and popular selections, not every one, as with William Tell and 1812, always chosen for novelty (for example, the Debussy Chansons). King Henry VIII's Pastime with Good Company, in which various renaissance instruments are amusing-

ly imitated, is just one of several entertaining items, and the eight-member vocal team is up to its usual high standards of spot-on intonation and expert ensemble. Sound is natural, close-up, and without much ambience in the studio, the seven items which open and close the program being live before an audience and sounding rather more open.

— Igor Kipnis

CHRIS MERRITT: The Heroic Bel Canto Tenor
Arias by Donizetti and Rossini
Chris Merritt, tenor; Münchener Rundfunkorchester, John Finucane
Philips 434 102-2 (C1 only). Torsten Schreier, prod. D110. TT: 68:04

This is not easy to listen to. Merritt's big, steely, agile, wide-ranging (at least two-and-a-half octaves, up to a high E-flat) voice has always been a matter for discussion: His technical mastery is remarkable (almost as fine as Rockwell Blake's, with whom he shares repertory), and his involvement is undeniable. But the tone has rarely been called ingratiating (or anything close), and as he has aged and begun singing heavier roles, that tone has become, as we can hear here, downright ghastly. He sings softly at times, and still has a nice sense of line, but almost none of it falls kindly on the ear. The Rossini arias (from Erminie, Otello, Elisabetta, and an almost unknown cantata dedicated to Pope Pius IX composed in 1846) at least exhibit the tenor's virtuosity and can be recommended for that; the Donizetti selections are simply ugly and offer little or no pleasure. If this had been recorded ten years earlier it might have had some value other than for the curious; as it stands now, it's a mess.

— Robert Levine

LEONARD SLATKIN: St. Louis Symphony Orchestra: The Slatkine Years

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Husa's Concerto for Orchestra, not yet recorded elsewhere, and we have a rather comprehensive overview of the various states of the contemporary idiom.

Schwanter's *From Afar...*, also available commercially on Virgin Classics (Sharon Isbin, with Wolff/St. Paul Chamber Orchestra), is a fantasy in the Spanish style, as befits its solo instrument. Amplifying the guitar, even discreetly as is done here, makes it possible to score for a full and colorful orchestra. The work is very pretty, and beautifully played here, with craftsmanship and high quality evident throughout. Even so, my ears were drawn to the time-elapsed display about halfway through its 15-minute length.

Claude Baker's *Shadows: Dirge Nocturnes for Orchestra* is a four-movement symphony with a movement that could pass for a kind of "dirge scherzo." Baker quotes Mahler as he waxes tragic before our ears. In the absence of program notes on this or any of the works in the set, we're left with no clue as to Baker's or his colleagues' frames of reference. Whatever it means, *Shadows* is expertly drawn with the highest professionalism, as is the performance. But 10 or 100 years from now, will anyone care?

More engaging by far is Donald Erb's *Antumniss* for taped electronics and orchestra. Here are 13 fascinating minutes of peeps and whistles that hopefully won't have you looking at your watch. Joan Tower's *Island Music*, possibly due to its directness, utter lack of pretension, and brevity (just under eight minutes), comes off as the most fun, a tour de force of orchestral virtuosity and audiophile frisson.

Karel Husa, the most mature and widely performed of these six contemporary composers, is represented by his recent Concerto for Orchestra. Husa doesn't so much write themes as utter brief, jagged motifs and develop them on the move. Aside from extended peripatetic musings for woodwind instruments (in this piece a rather portentous one for alto flute), his writing pushes the envelope of orchestration so far as to be downright unidiomatic. The piece does have an arresting, almost hypnotic quality, and receives considerable applause here.

The set's most imaginative offering is Slatkin's mix'n'match version of Mussorgsky's *Pictures at an Exhibition*, into which he pours the work of eight different arrangers—including Ravel, who remains unheard until the end. Other arrangers include Stokowski, Ashkenazy, Gorchakov, Lucien Calliet (believed to have been the ghostwriter of numerous transcriptions attributed to Stokowski and Ormandy), and Sir Henry Wood, founder of the Albert Hall Promenade Concerts and an early British champion of Mahler and Schoenberg, whose transcription predates Ravel's by a decade.

Complete recordings of the Stokowski, Ashkenazy, and Gorchakov versions continue to be available commercially. A 78rpm album of the Calliet by Ormandy/Philadelphia remains in limbo, and the Wood has never been recorded—all of which makes Slatkin's pastiche fascinating listening. The performance is preceded by an 8:15 minute commentary by Slatkin, illustrating yet another facet of his approach to his community of listeners: He likes to talk with them. Though unfortunately bitten by the PC bug with regard to discussing Mussorgsky's coarse portrayal of Polish Ghetto Jews, Slatkin proves an engaging personality. Most important, he knows when to stop.

A collection of live recordings engineered by the late William Hoekstra can be an invaluable resource, a veritable primer in how to record orchestral sound. Even the few performances recorded by others bear his imprint.

*The Slatkin Years* offers something for every taste. Whether it adds up to $100 worth for collectors outside the immediate loyalty area of St. Louis, or whether $250 for an autographed set represents an investment, only the market will decide.

—Richard Schneider

**JAZZ & BLUES**

**MUHAL RICHARD ABRAMS: One Line, Two Views**

Muhul Richard Abrams, piano, synthesizer, rain stick; Mark Feldman, violin; Tony Cedras, accordion; Marty Ehrlich, alto sax, bass clarinet; Patience Higgins, tenor sax, bass clarinet, percussion, bass; Anne Leibow, harp; Eddie Allen, trumpet; Lindsey Horner, bass; Bryan Carton, vibraphone; Reggie Nicholson, drums, voice | $100; *One Line, Two Views* (available on ECM by de Watert/SFSO) | Produced by David Baker. Eng. DD. DDD. TT: 7648

Now of retirement age (if musicians retired), Muhul Richard Abrams has been for decades a strong, if sometimes elusive, presence in jazz. One of the original organizers of Chicago's AACM, he helped define that group's aesthetics as well as its politics, combining in his own works new sounds and textures, opening up casual-sounding written lines with group improvisations and a loose rhythmic feel that suggest freedom even when his melodies and arrangements are
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planned. He went his own way in the '60s, and is proud of having done so.

One Line, Two Views speaks eloquently of the range of Abrams's ensemble work: with Blu Blu and Family Talk, it's one of a series of satisfying recent recordings that feature him with a mid-sized group. The ten instrumentalists here allow Abrams to indulge in the varying sounds he loves. "Textures '95" begins with clattering vibes accompanied by an abstract tapping on drums. Then a surprise: the violins enter, playing the first theme with a big, romantic tone later echoed by trumpeter Eddie Allen. The horns spit out a jumpy tune that's kept in the background as soloists act up front. There follows the more conventionally swinging "The Prism 3": Over the swing drumming of Reggie Nicholson, Allen plays a repeated passage that seems to be the main theme. Later, in a new section, he plays long tones and quotes "Tequila."

"Hydepark" begins as a duet between bass clarinet—I believe Marty Ehrlich—and bass until the string bass yields to a second bass clarinet. For a while this piece becomes a succession of duets. Like many Abrams pieces, the theme is a long, obsessive line that is made to seem casual, even meandering, by the loose rhythmic feeling underneath it. Abrams' "Tribute to Julius Hemphill and Don Pullen" turns out to be a cheerful Tex-Mex piece whose character may refer to Hemphill's Texas background. (Pullen may be evoked by the furious group improvisation of the middle section.)

The title piece, "One Line, Two Views," begins with accordion and harp—it sounds rather like a number by Astor Piazzolla—and becomes a succession of informal duets ("two views") playing different versions of the one line of the title, and "Ensemble Song" includes muttering vocals by the band whose members read, mostly incomprehensibly, fragments of written texts over the improvisations of the others.

But what makes Abrams' recent music so satisfying is the sense of the composer's control over the unfolding of even his freest-sounding pieces, which are shapely and dynamic as well as full of evocative textures.

David Baker recorded this session with his usual skill. The disc nonetheless isn't always as clear as other performances, probably because of the spontaneous shifts in instrumentation and the size of the group. Baker chose to move the band back a little in space, so the recording has depth if not the ultimate in clarity.

—Michael Ullman

BADI ASSAD: Rhythms
Badi Assad, guitar, vocals, harmonic copper pipe, electric fan, percussion; Cyro Baptista, percussion
Chesky JJK377 (CD only), Miguel Ketterman, prod., eng.: Bob Katz, eng. DDJ. TT: 54:43

Badi Assad is an accomplished singer/guitarist from Sao Paulo who boldly executes complex concurrences of chords and counterpoints and bass lines. She can trace the most delicate thread of a tone poem ("Song for Badi" by Kevin Callahan), or unleash sinuous momentum ("Bate-coxa"). She may come from the same folkloric traditions as all those girls from Ipanema, but she plays another kind of samba, one which includes the Brazilian avant garde.

The ethnicity and austerity of this music create objectivity, and may help me answer a question whose answer has thus far proven elusive: Given the meticulous care with which Chesky albums are recorded, why do they so often fail to move me? Since aesthetic content and sonic presentation are inextricably melded on a recording, it's difficult to know whether Badi Assad's music never quite catches fire and therefore the accuracy of the recording becomes less relevant, or whether the clinical detachment of the recording robs her art of its magic.

Chesky employs a minimalist live-to-two-track approach with an all-tube recording chain, and pays careful attention to room acoustics. Like the label's recent Oregon release Beyond Words, Rhythms was recorded in St. Peter's Episcopal Church in New York. Oregon's varied instrumental array took on richness in the resonance of this setting, but Badi Assad is not as well served. The sound of Rhythms is absolutely error-free, yet we never fully feel this music's life. Perhaps the answer to the question posed above is that the recording of music needs the exactitude of science, but also the mystery of art.

—Thomas Conrad

JOHN COLTRANE: Stellar Regions
John Coltrane, saxophones; Alice Coltrane, piano:
Jimmy Garrison, bass; Rashied Ali, drums
AAA/ADH. TTs: 47:26, 60:56
DUKE ELLINGTON: Live at the Whitney
Duke Ellington, piano, Joe Benjamin, bass; Rufus Jones, drums
GRP/Impulse! IMPD1-173 (CJ1), Michael Landy, digital editing. ADH. TT: 55:22

Slipped in among GRP/Impulse! reissues, these two recordings by jazz giants have never been available before. Who knows why? The Ellington concert is, according to Dan Morgenstern, one of only three he gave in anyone's memory as a soloist, and it's an intriguing, if customarily played, document. The Coltrane is invaluable. Made five months before the saxophonist's death on July 1, 1967, Stellar Regions disappeared when Coltrane took it and other tapes home to evaluate. (One number, "Offering," was issued on Expression.)

Alice Coltrane and son Ravi found those tapes recently, and they're a joy. In his last year, Coltrane was becoming an ever greater instrumentalist. His control over the tenor sax in particular was deepening, given the evidence of recordings such as Expression and Interstellar Space. He was editing himself more severely, and in these records played with a smaller band and a single drummer. Gone were the hour-long versions of modal tunes with a screaming Pharoah Sanders, and Rashied Ali and Elvin Jones battling on percussion. The earlier performances had a visceral excitement; the last Coltrane featured tighter structures and clearer textures. Stellar Regions is accessible but still probing. Coltrane's never exactly light-hearted, but I see some evidence of humor on "Configuration," a piece that seems constructed out of repetitions of an upwardly moving scale ending on a kind of bip. After a short solo by
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Rashied Ali, this piece turns into a duet between Ali and Coltrane, who plays an extended series of short phrases periodically interrupted by high, overblown notes. "Scratchlight" is in Coltrane's best meditative style, while "Jimmy's Mode" is a gentle, minimalist line used to set bassist Jimmy Garrison off on his thoughtful solo. One can hear Coltrane playing downward-spiraling sequences on "Iris," then moving into more agitated sections. Though the previously issued "Offering" has something of a flavor of A Love Supreme, the rest of the disc suggests new directions: less weighty themes followed by tighter improvisations.

GRP Impulse has issued this collection on a beautiful-sounding LP, and, with three alternate takes, on CD. Both sound excellent, even if the LP is warmer and has slightly more presence. There is some printhead on the tapes—at times we hear an echo of Coltrane before he actually enters.

Even though Ellington and Coltrane recorded brilliantly together, few people think of them together. Ellington was a wit and an entertainer as well as a master composer-arranger. Coltrane improvised at great length, and was sober as a judge. It's instructive to remember, then, that at the time Coltrane was recording Stellar Regions, Ellington was working on his Second Sacred Concert and describing himself as a "comedian, one who tries to bring messages to people, who never have heard of God, but those who were more or less raised with the guidance of the Church."

Ellington was, of course, a master of many things, among them lowering expectations, which he could do as well as a front runner going into a primary. For years he denigrated his piano playing. But no one who's heard his playfully complex introductions to "Rockin' in Rhythm," or, for that matter, his brief, brilliant, almost atonal swirls on "Koko," will denigrate his genius as a band pianist. He drove that band, sparked it, and illuminated everything they did.

As a solo or trio pianist, however, Ellington could veer from the too casual to the totally prearranged. His pieces could be mere sketches or seem almost lumpishly unfinished, like a statue beginning to peer out from a hunk of rock. He was given to abrupt endings and barely prepared transitions. His "Mood Indigo" here stops on a dime after he has decorated the melody a variety of ways: clearly he didn't want to improvise on the chords. A piece like "A Mural from Two Perspectives" is much less solid than its title suggests.

On the other hand, at the Whitney he plays another "Lotus Blossom," which he had already recorded on And His Mother Called Him Bill. He grew up in the tradition of stride pianists, who frequently trotted out prepared performances. "Lotus Blossom" is among them, and the Whitney performance doesn't add much to what we know about the piece.

Nonetheless, I wouldn't be without this recital, which was part of a series at the Whitney in 1972, each celebrating a different composer. It's a pleasure to hear Ellington evoke orchestral effects on the nine-minute "New World A-Coming," and to hear less-well-known pieces such as "Le Sacre de Velors" and "Soul Soothing Beach." He gives us the initial sections of his first composition, "Soda Fountain Rag," stopping, he confesses, when he got to the hard part. The recital is designed to show off his compositions, which may account for the brevity of many selections. Mostly, I think, he preferred to offer up his melodies without taxing himself too severely with improvisations.

Ellington was playing a good piano that night, and he was utterly charming as always, leading the audience in what I'd have to call a "talk-along" on "I'm Beginning to See the Light," evoking orchestral effects on the spare melody "C Jam Blues," and improvising on "Satin Doll." The sound is clear if not brilliant.

—Michael Ulman

GATEWAY: Homcoming
John Abercrombie, guitar; Dave Holland, bass; Jack DeJohnette, drums
ECM 1562 (78181-21562-2, CD only). Manfred Eicher, prod.; Jan Erik Kongshaug, eng. DIDJ. TT: 73:23
KRATAKAU: Mantiale
Raoul Bjorkenheim, guitar; bass recorder, gong; Jone Takasaki, tenor, alto, sopranos; & bass saxes, kraka- phone, reed flute, wooden flute, bell; Uffe Krokiards, double bass, percussion; Ilpe Katcha, drums, percussion
ECM 1529 (78181-21529-2, CD only). Steve Lake, prod.; Martin Wieland, eng. AAD. TT: 54:10
WAYNE KRANTZ: 1 Drink Minimum
Wayne Krantz, guitar; Lincoln Goines, bass; Zach Dunigan, drums
Enja 90432 (CD only). DIDJ. TT: 52:45

Don't let the high profile of the Mark Whifields, Russell Malones, and Peter Bernstein's of this world fool you—there's a world of jazz guitar out there remarkably free of talented twenty-somethings emulating their elders.

John Abercrombie, Wayne Krantz, and Raoul Bjorkenheim listened to the same Wes, Jim Hall, and Kenny Burrell records as the aforementioned three. But not content to merely reinvent the wheel, they've incorporated other musical influences to break new ground and create highly distinctive voices on the instrument.

In 1975, the debut Gateway record helped define the new fusion of jazz and rock before the "F" word became an exercise in athleticism before modulating into somnambulism. The Abercrombie/Holland/DeJohnette combo offered a generous helping of what jazz was supposed to be about: listening. The oft-used description of group playing as a conversation didn't just fit: Gateway helped set the standard.

From the opening bars of the new record's title tune, the three musicians' awareness of each other is palpable. You can't listen if you don't stop talking, and Abercrombie's phrasing leaves plenty of space for response from his compatriots.

Highly regarded among his fellow musicians for two decades, to the public Abercrombie remains slightly in the shadow of Sco, Metheny, Stern, and Frisell. It may be that his unsentimental ability to immerse himself in the music reduces his visibility. Just as likely, it's his refusal to ever play it safe. There's a restless, searching quality to his solos—never tentative, neither are they always successful set pieces. That's the danger of going out on a limb: it's what jazz is all about.

Holland's warm, woody tone combines with DeJohnette's sizzling cymbal work to provide a simultaneously safe and stimulating base for Abercrombie's excursions. As composers, the three share a lyrical bent combined with a sense of anything goes.

The lush ECM sound is evident here, as is an ample answer to any claims that the label is anti-swing. The primary thing that assures Abercrombie a place in the first rank of jazz guitarists is that...
he swings harder than anyone around. Nor are his partners slouches in the swing department, making Homecoming an example of jazz at its best.

I've always loved Wayne Krantz's sound and style, so it pleases me no end that he's finally done a record that I can recommend without reservation. Krantz & Co. take the trio concept in a direction different from Gateway's. Imagine Jethro Tull (an admitted influence) meets Tower of Power and you're in the ballpark. These guys also swing, but the emphasis is on "da Funk."

Krantz's first two records featured his wiry strata tone riding the edge of distortion, his muscular attack and compositions so opaque and personal as to be impenetrable to most guitarists, let alone the average listener.

With the live 2 Drink Minimum Krantz takes a giant step toward accessibility. The album contains only part of one previously recorded tune. The new tunes are by no means "happy jazz," but "Dove Gloria" works off a repeating riff, and "Dream Called Love" has a discernible melody. The compositions remain complex but now have centers that hold.

And these boys burns. This is a New York record—highly caffeinated, the interaction here takes place at warp speed. "Whippersnapper" and "Lynx-paw" start at an energy level of 10 and go to 12. Athletic, yes; by the numbers, never.

Recorded in a small bar direct to DAT with a pair of mini-mikes, it sounds fantastic—minimal crowd noise, just enough room, and a balance that's just short of miraculous.

Jimi Hendrix took the power trio into the world of pure sound and swing. If he'd been influenced more by Ornette Coleman and John Coltrane and less by Curtis Mayfield and Buddy Guy, he might have sounded like Krakatau.

Finnish guitarist Raoul Bjorkenheim grew up on Hendrix, but also studied at Berklee and played with fellow Finn Edward Vesala, who pushed him away from academicians toward sonic colors. The right sound for the song is so important to Bjorkenheim that he eschews guitar altogether to paint an "Unseen Sea Scene" with drums, reed flute, and gong. Add some echoes of Chinese and Indian music to result in sounds unlike any you've heard before.

Bjorkenheim's control of distorted guitar tone is complete. Producer Steve Lake accomplishes the difficult task of capturing all of his power and overtones while simultaneously recording an acoustic bass; it seems to require a wider soundstage than on the Gateway disc. While Lake may not match Manfred for crystalline sonic purity, he's helped Krakatau to create a record that's significantly edgier than your average ECM product, yet still maintains the label's ambient attitude.

—Michael Ross

GERRY MULLIGAN: Dragonfly
Gerry Mulligan, baritone sax; Ryaan Kisot, Iobby Mulliken, Byron Stripling, trumpet; Warren Vache, cornet; Luis Bonilla, Jim Pugh, trombone; Dave Taylor, bass trombone; Dave Samuels, vibraphone; John Scofield, guitar; Ted Rosenthal, Dave Grusin, piano; Dean Johnson, bass; Ron Vincent, drums. Telarc CD-85377 (CD only). Gerry Mulligan, John Snyder, prod.; Jack Reiner, eng. DDD. TT: 65:22

DAVE BRUBECK/GERRY MULLIGAN: Live at the Berlin Philharmonic
Gerry Mulligan, baritone sax; Dave Brubeck, piano; Jack Six, bass; Alan Dawson, drums. Columbia Legacy 2K 66820 (2 CDs only). Dave Brubeck, prod.; Mark Wilder, Thomas Ruff, digital mastering. DDD. TT: 116:33

When I began listening to jazz, Gerry Mulligan, who in January died a seemingly needless death from an infection following knee surgery, seemed to be everywhere. That's where he liked to be: leading a subtly swinging big band, jamming on record with Ben Webster or live with Art Farmer and Zoot Sims.

Having written and performed for Miles Davis's Birth of the Cool sessions and led his own wildly popular groups with Chet Baker, Mulligan was known for cool jazz. He had certain attributes of the cool school. He favored the light, top range of his favored instrument, the baritone saxophone. He loved to find himself in intricate play with other soloists, weaving gruff responses to the tart comments of Paul Desmond, for example. His music was conversational, full of expressive nuances and with a vital forward thrust. His bands swung, but they never screamed: they earned their excitement. He was a writer who opened up his pieces to the wonders and vagaries of individual solos: buoyed by the Mulligan riffs behind them, sometimes his soloists took off delightfully, as Zoot Sims did on Mulligan's "Apple Core."

Laid-back as some of his arrangements are—he was a master of making the big band seem small—Mulligan was also a swinger. On Billie Holiday's "Fine and Mellow" broadcast as part of The Sound of Jazz, Mulligan stood among the giants of swing: Ben Webster, Coleman Hawkins, and Lester Young. They seemed determined; Mulligan, who in those days was a gaunt figure, tall and pale, was just as involved but edgy as he shifted from foot to foot responding to the music; his solo was equally restless. He settled down in later years, becoming one of the most interesting big-band writers since Ellington. He also led marvelous smaller groups, such as the sextet with Zoot Sims and trumpeter Jon Eardley that made Presenting the Gerry Mulligan Sextet on EmArcy.

In the last decades, Mulligan frequently played with Dave Brubeck—he was Brubeck's replacement for their common friend Paul Desmond. Mulligan's baritone gave the quartet a new sound, and yet his lyricism extended the tradition that Desmond had established with the band. Recorded in 1970, Live at the Berlin Philharmonic was originally a radio broadcast: the sound is generally fine, but we hear some fiddling of knobs by the broadcast engineers. Rapturously received, the set contains a typical Brubeck mixture of standards such as "Out of Nowhere" and originals, this time taken

Recently, Mulligan, who was never exactly an austere player, became even more lyrical: I heard him several times accompanying Mel Tormé, and he fit right in. He must have been frustrated by his inability to keep a big band together. Many of his fans, myself included, were frustrated that we couldn't hear more of his writing.

Recorded in spring 1995, Dragonfly displays many of Mulligan's talents and proclivities. It features Mulligan's basic quartet with guests such as Grover Washington and John Scofield and with a brass choir. Mulligan's writing is striking as always — the wonderfully understated way the brass plays on "Brother Blues" is a marvel of tact and warmth and good feeling. He doesn't compete with Grover Washington — when they trade fours, they seem to be finishing each other's thoughts. Mulligan pays tribute to Astor Piazzolla on "Listening to Astor," and to Art Farmer on "Art of Trumpet."

Dragonfly doesn't sum up Gerry Mulligan's restless, active, constantly productive career. No one disc could. But it's a wonderful, generous, warmly recorded document from a whole-hearted musician. Another one of our night lights has gone out.

— Michael Ullman

CLAIRE MARTIN: Old Boyfriends
Claire Martin, vocals; Mark Nightingale, trombone; Jim Mullen, guitar; Steve Melling, piano; Arnie Somogyi, bass; Clark Tracey, drums
Linn AKD 028 (CD only). Joel E. Siegel, prod.; Calum Malcolm, eng. ADD: TT: 57:18

MARTIN TAYLOR: Spirit of Django
Martin Taylor, acoustic guitar; John Goldie, acoustic rhythm guitar; Dave O'Higgins, tenor & soprano sax; Jack Emblow, accordion; Alec Dankworth, acoustic bass guitar, cahaba; James Taylor, snare drum
Linn AKD 030 (CD only). Martin Taylor, prod.; Calum Malcolm, prod., eng. ADD: TT: 60:24

Linn of Glasgow, Scotlad is one of the very few audio manufacturers with a cult following so loyal it has a name. On this side of the Atlantic, probably only Linnies are aware that the company has been recording music since 1982. Spirit of Django and Old Boyfriends are the first Linn recordings released in the United States.

The label's mission statement is "to record music with the integrity, quality, and clarity needed to showcase Linn's renowned hi-fi equipment." In 1996, when current recording and mastering techniques make good sound available to any reasonably conscientious record producer, "clarity" is no longer a raison d'être for a label. First, the music must matter.

Does Linn succeed on both levels? The answer is an almost unqualified yes. Linn does music rather like it does audio hardware: with ferocious independence, an obsession about purity, oblivious to fashion, and marching to its own quirky Scottish drummer.

It's interesting that three other tributes to Django Reinhardt, who has been dead for 42 years, were released approximately concurrently with Martin Taylor's Spirit of Django. (The others are from Charlie Byrd, Birle Lagrene, and Charlie Haden with Christian Escoude.) Taylor's album is the most successful in imagining how Django would sound if he were alive today. (One of Taylor's postulates is that Django would be interested in Robert Palmer songs like "Johnny and Mary."

Taylor is well equipped for this project. He possesses enormous technical facility and an aesthetic sensibility based in an earlier era. (Taylor met Django Reinhardt when he was four, started out listening to Hot Club jazz, and developed—to quote Brian Morton's liner notes—"almost untouched by rock.") Comparing Taylor's versions of songs like "Night and Day," "Honeysuckle Rose," and Django's most famous composition, "Nuages," to the Reinhardt originals from 50 years ago, the kinship is apparent. Taylor has the same sweet, burnished sound on his instrument, and he's absorbed Django's rhythmic pulse, pacing, and evocative inflections. Taylor's airy ensemble can revisit "Nuages" with such dashingly romantic decadence it's like a time warp. But Taylor can also re-create "Django's Dream" entirely in his own image. It's the deepest kind of tribute, through melody, from one musician to an ancestor. The other members of the band are not on Taylor's level—but not many players are. Check out the dazzling chromatic run at 3:40 of "Nuages" —it's a reference to one of Django's American recordings of the song, and few guitarists could even attempt it.

Linn provides no information about its recording methods, not even SPARS codes. The sound is that of distant miking, on the soft side of natural. The treble is reticent (notice James Taylor's deeply recessed brushes on "Minor Swing"), and so is the stereo separation. The absence of a sonic signature eventually becomes one. Once you have adjusted to the extreme neutrality, the subtle glow of Martin Taylor's music shines through.

Every new season brings its crop of jazz divas, but Claire Martin all by herself makes 1996 a very good year. This English original is wise beyond her twenties. In years, with a smoky, hip-yet-vulnerable voice, supremely confident intonation and diction, compelling credibility with a story line, and daring ideas about material. Like all the best female jazz singers, Martin is equal parts improvising musician and actress. She writes few songs herself, but makes intensely personal messages from neglected standards and well-chosen contemporary compositions. The elegant suave of her voice and her gut-level honesty draw the listener in to live these stories with her.

Except for Harold Arlen's "When the Sun Comes Out," even knowledgeable jazz listeners may not know the songs on Old Boyfriends. But there's great stuff here, like the title track, an existential Tom Waits exercise that compares old boyfriends to "burnt-out lightbulbs on a Ferris wheel." And like a modern ballad called "I've Got News," by Jonathan Blair, about summoning the courage to end a love affair ("I've got news...what's to lose...I've got news...we're through"). Martin nails both the melody's intervals and the narrative's painful achievement.

Producer Joel Siegel's liner notes describe Martin's accompanists as "the cream of the UK's finest younger players," and it's easy to believe him. Trombonist Mark Nightingale is a forceful and eloquent "partner in crime" — the title of the third track. This trenchant ode to a less-than-healthy codependent relationship ("she's into power, he's into pain") shows off Martin's impeccable time as well as her street smarts.

Old Boyfriends was recorded in the same studio — a converted Victorian schoolhouse east of Edinburgh — as the
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Taylor album, and by the same engineer at about the same time. It’s not as error-free as Spirit of Django; sometimes engineer Calum Malcolm lets the supporting ensemble crowd Claire Martin’s voice until her words become almost unintelligible, as on “Partners in Crime.” But the instrumentation here — voice, full rhythm section, trombone — allows Linn to strut its sonic stuff with more impact and panache. Old Boyfriends is, for the most part, a crystalline window on Claire Martin’s art — which, by the way, merits all of Linn’s special attention.

Linn Records is off to a promising start in the colonies. It’s a label to watch.

— Thomas Conrad

**Popular**

**AZTEC CAMERA: Frestonia**


Frestonia begins promisingly enough with “Rainy Season”: a guy seemingly noodling around on a piano on a wet afternoon in Margaritaville (“When the rainy season comes / I hang my head / For all the things that I’ve seen and done and said …”) , but the effect soon gives way to the sins of overproduction (the press handout deems the producers “inestimable,” always a giveaway) and a muddy, wallowing sort of lack of differentiation among the album’s ten tracks.

A Scots pop star at age 16, today singer-songwriter Roddy Frame brings the polish of five more albums and a collaboration with Ryuichi Sakamoto to bear on what’s essentially the untutored (or self-taught) sensibility of a reasonably upfront, self-described “simple, unassuming sort of guy” (“On the Avenue,” arguably, with its whiff of Laurence Durrell, both oblique and direct, a cut above the other tracks). Think “A Shropshire Lad” or any of Kipling’s unknown soldiers, and you’ve got it.

Unfortunately, Frame’s pretty limited in his choice of imagery (the color blue, the sea, the sun, bridges burning, broken-winged birds of love), although Aztec Camera (the band) manages to get the mood across. Inarguably superior to the Cat Stevens/Al Stewart/Engelbert Humperdinck school of crooners, Frame is an unfinished but potentially fine solo performing talent who may now know he should be searching for an artistic voice: Here, two tracks at least could be hoffo cabaret for Mandy Patinkin (“Crazy,” “Rainy Sea— son”); a wider range of interests and a sense of irony could lead to Billy Joel, and Frame’s flair for the dramatic could easily turn him into an incarnation of Freddy Mercury. Loosen up, bubbly.

As it is, Frestonia’s “pop classicism” all gets rather samely, in sound and pace and style. Frame easily crafts the occasional fine line and witty melodic turn and would, no doubt, have already jotted “when the dawn comes up like thunder / ’cross the bay” if Kipling hadn’t got there first. On the other hand, his work goes nowhere, just out for a Sunday drive.

At this point, Roddy Frame is Proust’s “foulness water”; he could and should do better. Hope so, though meaningful life experience is out of his hands. Hell of a good voice; sounds like a nice guy; sells a lot of records.

— Beth Jacques

**MARIAH CAREY: Daydream**

 Columbia CK 66700 (C1). Walter Afanasieff, Dave Hall, Jermaine Dupri, Manuel Seal, David Morales, Mariah Carey, prod. TT: 46:44

**PAULA ABDUL: Head Over Heels**

 Virgin America 40525 2 (C3). Gemini Corfield, exec. prod. TT: 59:41

Someone said recently in the New York Times that since now something like just six mammoth record companies span the entire globe, the music biz in the ’90s is more concerned about filling its distribution pipeline with product than developing a musical artist’s career.

Duh. But since you, the record-buying public, will be at the receiving end of efforts aimed at emptying as much of this pipeline as possible before “the product” finds its natural level (Japan, in Mariah Carey’s case, and Long Island; Germany — maybe — in Abdul’s), here’s the Stereophile Consumer Tip of the Month: Careat emptor.

In Carey’s case, CBS-Sony Music supremo and chubby Tommy Mottola (the music industry’s answer to Don King) has spared no expense on Daydream in wielding the best of the best super-hip producers (and at least one PR liability on the order of Iron Mike “promoter” Sean “Puffy” Combs) to turn Ms. Carey, the Grammy Award—winning songstress with the soul of Marie Osmond, into (ha) Janet Jackson. If that weren’t enough, Carey’s typically overwound vocal delivery here stretches tighter than Nancy Reagan’s cosmetic surgery. When the ancestors said “digital” don’t sound natural, Daydream is what they meant: tense on top, short on the bottom, flatline in the midranges, loads of EQ, and everything speeded up to get everybody to the church on time.

Carey wrote all this shush too, except for the Journey cover (“Open Arms”) and a sample from Tom Tom Club that should have Tina Weymouth bringing suit. Mariah, just because we have the technology doesn’t mean we should waste electromagnetic media — no amount of recording smarts or guest vocals from Boyz II Men, for instance, could ever redeem a track that takes a premise dubious at best (dead friends, oh, how we miss them, they twinkle down on us from up in heaven; “One Sweet Day”) and pours on syrup ’til the result is like drinking antifreeze.

As for Paula Abdul’s Head Over Heels … in a fit of what-the-hell/throw-everything-at-the-wall, Virgin America has deployed no less than 12 (twelve) producers with orders to repack this one-time pro cheerleader’s Betty Boop voice, Marla Maples legs, and Pia Zadora persona into a song-and-dance extravaganza à la well, Mariah Carey.

It’s sowe’s ear time. Even the CD’s one bright spot, shimmering guest vocals by Israeli singer Ofra Haza on “My Love is for Real,” is occluded by this woman’s absolute inability to think, write, or say anything that doesn’t spell B-I-M-B-O. Goldie Hawn kick’in out the jams with Aretha could not possibly sound any worse. Words of three syllables on “My Love is for Real”: excuses, wondering, understand. Words of two syllables: mistakes, story, watching, inside, nothing, baby, wanna, gonna, worry, lonely, better, only. Number of one-syllable words: 185, mainly I/my/love/you/real. Paula, honey, play the acts: learn to ski, catch a ’copter to Aspen, marry a millionaire, and stay out of the studio.

— Beth Jacques

**CARLENE CARTER: Little Acts of Treason**

 Giant 24581-2 (C1). Carlene Carter, James Stroud, Howie Epstein, prods.; Jeff Souchleff, eng. TT: 45:57

Carlene Carter’s Little Acts of Treason picks up where 1993’s Little Love Letters
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left off: with a healthy mix of musical styles and a studio full of crack musicians: Albert Lee, Benmont Tench, and Big Al Anderson (late of NRHIQ). The generous helpings of butt-kickin' rockabilly, sassy cut-shuffles, ballads, and some flat-out pop'n'roll show Carter's continuing growth as a songwriter (she wrote or co-wrote 9 of the 13 tracks).

While always capable, Carter seemed to play it safe on past albums by writing about traditional country themes. But the opening track here, "Hurricane," tells of getting out of an abusive relationship ("He pushed and shoved me / And now I'm leavin' ") and offers advice to those who may find themselves in a similar situation ("If your man don't treat you right / Get even when you're leavin' "). On the title track, Carter sings of sharing another woman's man ("These little acts of treason / Tell on you and me "), and "Change" tells a story of personal redemption (her own?). Pretty heavy stuff from one who just a few years ago was singing tributes to her famous grandmother, Maybelle Carter.

The album is nicely balanced out with a few upbeat tunes; standouts include "Love Like This," with its killer harmonies and lush production, while "Come Here You" is your basic blues shuffle with some playful trade-offs between Scott Joss's fiddle and Mickey Raphael's harmonica. Carter remembers her country roots on "Loose Talk," a duet with her father, Carl Smith.

Given the variety of songs on Little Acts of Treason, it's no wonder that music biz types continue to be challenged to classify Carter's music. If you remember the bride when she used to rock'n'roll (Carter was married to Nick Lowe at one time), Travail shows that she hasn't forgotten how—she's just gotten better.

1990's I Fell in Love was on the slick side, with overdone reverb and echo; Howie Epstein's clean-as-a-whistle production on Letters sounded as if he was trying to compensate for Lom's excesses; but Travail's production, with Carter at the controls and assisted by Stroud and Epstein, is like the Baby Bear's porridge: juuuuuust right.

—Steve Stoner

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HOLLY COLE: Temptation
Metro Blue CD1 7243 (C13), Craig Street, prod.; Danny Keough, eng. AA17 TT: 57:00
STEP RIGHT UP: Various Artists
Manitoa PR 41101-2 (C13), Evan Cohen, exec. prod.; many cngs. AA17 TT: 78:36

Back in the fall of '89—first quarter of my freshman year—Tom Waits came to campus. During one of his moody streetcorner serenades he staggered over to a newsmack, picked up a copy of The Chicago Manual, and read a wisecracking lead about the soccer team blowing another game by a young reporter whose name modesty prevents me from mentioning. When I called my Aunt Mildred, expecting to have to start the story with a Drummers Personae, she said, "Tom Waits? Hate his voice. Love his songs."

Turns out there are at least a few other folkies on the same page as Aunt Mildy, even though Waits' down-and-out schtick has long overshadowed his rep as one of the best songwriters in the business. Step Right Up applies the classic tribute-album approach to Tom—a couple of stars, a lot of wannabes, mostly old songs—but the results are far better than usual for the genre.

Drugstore's aching cover of "Old Shoes" is an absolute stunner, rolling between a whisper and a shout the way all great melodrama should. Dave Alvin gives a similarly earnest treatment to "Oll 55," and 10,000 Maniacs do likewise with "I Hope I Don't Fall in Love with You." But this album isn't strictly a hankiefest. Alex Chilton hits a Memphis groove on "Downtown," while the Wedding Present turn "Red Shoes at the Drugstore" into an old-fashioned raveup. The over-the-top award has to go to the Violent Femmes for a reading of the title track that sounds like the Home Shopping Club fresh out of Thorazine. The one embarrassment is Tim Buckley doing "Martha" and sounding for all the world like Harry Chapin on a bender.

Holly Cole's Temptation is an even more elaborate deconstruction of the Waits myth. She sets his songs to spare, jazz-influenced arrangements, and her clear alto is worlds away from Waits' throat-polyps-waiting-to-happen. The result is a lovely, very modern album that's as spare as Waits are pack-rattish. Cole's diction sheds a new light on Waits' penchant for wordplay, and she's not afraid to give these numbers a twist: her "Jersey Girl" adopts a syncopated swing, "Falling Down" walks the same side of the street as Aretha Franklin, while "Frank's Thing" has a Bette-Midler-at-her-best thing going.

But Cole's most important gambles are thematic. She scrubs every last bit of self-pity from these songs, and they're that much better for it. "I Don't Want to Grow Up" here is playful, not pathetic, while Cole's version of "Heart of Saturday Night" isn't about last weekend, but next weekend. Here, hope is the thing without a five o'clock shadow.

I probably don't have to explain Cole's production to an audiophile audience. Don't Smoke in Bed has become a demo-day classic and, thankfully, Temptation is every bit as good. Cole's voice is captured beautifully, from sotto voce to full-tilt and everything in between. And she gets ample real-instruments-in-a-real-space support from bassist David Pitch and pianist Aaron Davis. The sound is simply beyond reproach: tonally honest, spatially precise, and appropriately detailed. Little bits of studio chatter—including someone's dog taking a sniff at the mike—only enhance the air of intimacy.

If you've got a system that you want to show off, Temptation is a must-have: every cut's a reference-quality winner. If you love Tom Waits, adding Step Right Up should be a no-brainer. And if you're not sure about Waits but you like great songs, take the plunge; you're in for a pleasant surprise. Aunt Mildred was always right.

—Allen St. John

STEVE EARLE: I Feel Alright
Warner Bros. 46201-2 (C1), Ray Kennedy, Richard Bennett, Richard Dodd, prod. AA17 TT: 39:00

"When I was locked up, I was getting ready to go off on this boy that stole my radio. My partner Paul asked me where I was going. I said, 'To get my radio — and then to the hole for a little while.' He looked at me like I look at my 13-year-old sometimes and said, 'No, you ain't. You gonna sit your little white ass down and do your little time and then you gonna get out of here and make me a nice record.' SO, I MADE TWO."

So reads Steve Earle's liner note to his new album, but he's proved himself better than his word. The first of his post-incarceration records, Train a Coming, was Stereophile's "Recording of the Month" last June, and was the best thing he'd
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Stereophile, April 1996
A space-age bachelor whose time has come: Michael Ross surveys the Juan Garcia Esquivel Reissue

This being the age that lives by the old saw: “Anything worth doing is worth overdoing,” RCA decided that they were giving away a gold mine, so they brought out their own compilation, Cabaret Mañana duplicates some of the Bar/None stuff and adds some previously unavailable cuts from Esquivel’s last recording, released only in Mexico and Puerto Rico. All three releases contain booklets chronicling Esquivel’s life and career.

In 1962, just before a hiatus from recording, Esquivel left RCA to do one record for Reprise, who have just reissued More of Other Worlds, Other Sounds in its entirety, with the original artwork, and liner notes describing how it was recorded on 35mm film for better fidelity.

Which brings us to sound. It’s ironic that the man who was sought after by the original stereo producers to help sell their equipment is, by today’s standards, an audiophile anti-Chris! The sound of these recordings is about as natural as Silly Putty. The soundstage isn’t just unreal—it’s surreal. Highs are accented, lows are boosted (Esquivel spent a lot of time EQing during original mastering). Sounds are echoed, delayed, and panned. In other words, they sound great. These soundtracks for Felliniesque dreams are as artificial as a Shinky and just as much fun.

—Michael Ross

DAVID GRISMAN & ANDY STATMAN: Songs of Our Fathers
Traditional Jewish Music
Acoustic Disc ACJ 14 (CD only). Andy Statman, David Grisman, prod.; David Herron, eng. TT: 49:38

Such music on this disc, forgive me, you should play! All the good songs from the old country, the ones my bubbeleh knew from the shetel. “Shalom Aleichem” and “Kazatski” and “Adon Olam,” I could laugh and cry at once. After hearing this, I am ready to drink a nice big bowl of borscht! Well, maybe I’m not. That stuff—though I say it who shouldn’t— is awful. But the songs and the playing, those are good, no? Mama, if you could have held on a little while and been like you were, you would have made me play this a hundred times. Well, maybe I will make a tape for my melsuggench customer Kassel, when he comes back from his cardiac castration, or whatever the verbakele doctors are doing to him. Then perhaps he will stop nagging me to fix his receiver that is older than God— broken it sounds good, working it is done—and buy a nice NAD or Rotel which I will get for him, he shouldn’t have to go to the gevina. Listen, I tell you, on “Bashie’s Bounce” (new old music, they say) there is this percussion. Only it doesn’t come from in front of me, but from way behind on the left. Wonderful sound like this, you shouldn’t play on junk.

So who are these guys? Statman, he plays Klezmer all the time, since he was a boy, but Grisman, he plays that bluegass with that other altekhecher Jerry Garcia, God rest his soul he should have taken better care of himself. Then all of a sudden, boom! they play the old songs like they were together in the synagogue every week. Both of them, they play the mandolin, and Statman also the clarinet. (Not so good as Benny Goodman, maybe, but he plays okay). There is also bass, guitar, and drum (the drummer is Hal Blaine, who is really Rose and Meyer Belsky’s boy Chaim Zalman, would you believe it), and they too play good. Better than good. The best! Believe me, that master rap with that Tuchus Shukur you don’t need. This you should buy!

—Leib Shalom Berkowitz (Les Berkley to you.)

HARVEST MINISTERS: A Feeling Mission
Sethara/Bar None AHAON-060-2 (CD). Phil Thorulny, prod.; Henny Binn, Nigel Godrich, engs. AA13 TT: 51:12

The second coming of Dublin’s The Harvest Ministers is a soulful little sleeper of a disc, rife with lyric wit and unusual intelligence. Entirely written and largely sung by the heretofore unknown William Merriman, A Feeling Mission is precisely that: a quest to reach the emotional truth hiding beneath the mask of daily routine.

For every brightly shining “Temple To Love” the search reveals, there’s a larger handful of lost souls drowning in romantic self-deception. To the ironically named Merriman it’s frequently the hugs and kisses that forestall the unpleasant
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Stereophile, April 1996
realization that, when it comes to interpersonal relationships, "this won't do" is often the operative bottom line.

But while Merriman-On-Love may be brutally honest next to a Paul McCartney, he's thoughtful and kind compared to the acidic Paul Heaton, whose The Beautiful South is perhaps the Ministers' strongest reference point. Both bands share a penchant for honed-eyed male-female dueting over lilting, occasionally ripe melodies that tend to belie their jaundiced viewpoints.

The album's infectious opener, "That Won't Wash," recalls The Kinks as played by a polished Into the Music-era Van Morrison band, and there's more than a touch of vintage Jesse Colin Young/Felix Pappalardi bittersweetness throughout via Aingeala De Burca's mournful violin lines. "Mental Charge," the most atypical of these dozen tunes, crosses Astor Piazzola with Graham Parker, and Music Editor RL says he hears the harmonies of The Beach Boys' Pet Sounds.

I also detect a bit of Pete Townshend's influence in Merriman's writing now and again, though he's a rhythm guitarist of far slenderer means. The self-critical "Dealing With a Kid" is like one of those bareboned Sowm demos, and the lengthy "A Secret Way" achieves harmonic conversion with Tommy-era Who.

In the areas of performance and sonic quality, A Feeling Mission marks a major step forward, the band's coming-of-age. Their 1993 debut, Little Dark Mansion, was a set of mildly interesting ideas done in by halfhearted singing and tinny, hollow sound. It didn't leave much of an impression. Here, through a combination of Phil Thornally's warm, full-bodied production and Merriman's maturation (the Ministers are his first and only band), everything's more compelling. The group's playing is consistently warm, and Merriman's learned how to get his points across. Despite his reedy, less-than-brilliant voice, the words he sings grab the attention and sink in deep. Attractive and dark elegies to the end of an affair to a band to watch and admire. — David Prince

VAN MORRISON: How Long Has This Been Going On
Van Morrison, vocals, sax; Georgie Fame, vocals, Hammond B-3; Guy Barker, trumpet; Pee Wee Ellis, Alan Skidmore, Lee Green, saxes; Robin Aspland, piano; Alec Bankworth, bass; Ralph Salmins, drums; with Annie Ross, vocal on "Centerpiece"

Ever since Hymns to the Silence four years ago, Van Morrison has been more energetic and prolific than at any other point in his career. And though at least half of the records released in those years have suffered from self-indulgence and bloat, you sure couldn't fault Morrison — who's 50 but doesn't look a day over 65 — for pumping up the energy, the volume, and the product on what's become at least a yearly basis.

So here's yet another album less than a year after last summer's patchy Days Like This, this one recorded in five hours at Ronnie Scott's in London, with a small club band led by Georgie Fame on B-3 and shadow vocals. It's a brisk (average length of the 14 songs: 3½ minutes) runthrough of a few Morrison standards ("I Will Be There," "Moondance") and harrier lounge staples like "Who Can I Turn To?" Mose Allison's "Your Mind Is On Vacation," and the title song.

At first it's great to hear Morrison bring such energy, speed, and bite to an album of R&B standards after more than a decade of midtempo Celtic mysticism that, no matter how many fans it gathered (incl. yrs trly) or how deeply felt, ended up sounding perfectly monochromatic after the 10th or 12th installment. But you soon realize that this energy, speed, and brevity are exactly what's wrong. How Long Has This Been Going On is Morrison's first title for Verve, who are marketing it as his first-ever "jazz" album — but Morrison and Fame seldom stop long enough to take a whiff of the musical roses, or let themselves get loose enough to admit that element of surprise that is the heart and soul of jazz. Their competent but clueless band doesn't help. Morrison sounds clipped, genuinely uncomfortable with such a potentially wrenching standby as "Who Can I Turn To?" — much as he couldn't loosen up with traditional Irish music on his collaboration with the Chieftains, Celtic Heartbeat. And though he sounds the quintessential seasoned veteran here — savvy, hip, cool, even slick (!) on his own "Moondance" — Morrison wears these songs like a series of perfectly fitted masks: one admires the craftsmanship, how perfectly soul is being mimed, even as nothing is revealed. Even his much-ballyhooed scatting on "Moondance" sounds practiced and mechanical.

The most successful track, Morrison's own "All Saints Day," works as well as it does only because it's such a sunny, serene trifle in the first place — but even so, the original version on Hymns to the Silence swings harder, fresher, better. Only on the title track and the looser "Don't Worry About A Thing" — and especially "That's Life" — does something besides rote soul stylings even begin to gleam through the cracks. Every other track is over before it can get started.

How Long Has This Been Going On is a promising high-concept memo for a great album that never quite happened: great singer, great charts, great set list, and damn good sound... but next time, Van, dump that squeaky-clean band of soul wannabes and try taking ten hours — or just one — to make an album. Sometimes second takes are good. But if the band ain't right, it don't matter how much you practice.

— Richard Lehner

P.M. DAWN: Jesus Wot

This third album from P.M. Dawn (aka Prince Be and J.C., aka the Cordes brothers) broadens their sonic palette and results in a more varied hodgepodge of soft soul, hip-hop, funk, and Princean spirituality than previous efforts. Prince Be is a polished soul singer whose light, tuneful tenor voice suits his material with confident ease. A mystic of sorts, Prince Be writes the kind of songs that seem to hang in the air with a blury, ethereal mix of abstract spiritualism and new age wishfulness. But, it's not all heart and flowers. There are enough doubt and probing, unanswerable questions in this material to aesthetically flesh out the songs.

With a sound that alternates between Prince, Marvin Gaye, Kool & The Gang, and Terence Trent D'Arby filtered through '90s hip-hop awareness, P.M. Dawn is an impressively skilled studio duo who rely on lush, layered vocal harmonies and pleasing harmonic arrangements to get the point across.
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STEREOPHILE, APRIL 1996
Though Bonnie Raitt has been a recording artist for over 25 years, *Road Tested* is her first live album. Too bad it's not a better one. While it's sure to sell lots of copies and definitely won't get her dumped from the Capitol roster (those Grammies should keep her locked up for a few more years, no matter what she releases), this two-disc set is unlikely to garner many new fans.

A huge mainstream success in recent years, here Raitt is polished, accessible, unpretentious, consistent, and, at this point in her career, all too predictable. The problem? *Road Tested* is "safe" to the point of tedium. There's no edge, no "pushing the envelope," and certainly no risk-taking—just time-tested, formulaic, middle-of-the-road pop/rock/blues. Admittedly, one doesn't look to Bonnie Raitt for cutting-edge innovation. But there's not much of the gritty, emotional testifying she used to serve up, either.

To make sure that everything worked outside the studio, Raitt and co-producer Don Was trotted out a long line of supporting talent on these live tracks, including Jackson Browne, Bruce Hornsby, Kim Wilson, Ruth Brown, Charles Brown, and Bryan Adams. But there's little that bears re-hearing except for a lovely, moving performance of "I Can't Make You Love Me." Yes, the band plays with skill and technical aplomb; yes, the recording is well-done; yes, most of this material suits Raitt like a tailored jacket with matching boots and stretchpants. Still, the closing tune, John Prine's "Angel from Montgomery," is lethargic, lacks ironic emphasis, and sounds just plain wrong.

Die-hard Raitt fans may feel there's enough here to justify purchase, but I doubt that even the most rabid devotees will find themselves spinning these discs endlessly. *Road Tested* isn't really bad, just inessential.

— Carl Baughner

**ROLLING STONES: Stripped**

Virgin 451440 2 (C19). Don Was, the Glimmer Twins, prod.; Ed Cherney, eng. AA1. TT: 74:49

**DAVID BOWIE: Outside**

Virgin 40711 2 (C19). David Bowie, Brian Eno, prod.; David Richards, eng. DDD. TT: 74:51

What's left when you can sell records just by putting your name on them? Maybe it's the Seven Deadly Sins. David Bowie evidently started with pride, the Rolling Stones with sloth.

The Stones' *Stripped* is as calculated a piece of product as pop has seen since Milli Vanilli turned off their mikes: a bunch of tired cuts (Wow! "Street Fighting Man"! Oooohh! "Angie") recycled with garage-band arrangements. These could be rehearsal tapes from the Voodoo Lounge tour. And since "added value" is a marketing buzzphrase for the '90s, *Stripped* comes with a bonus: a CD-ROM segment of the band's video.

The one transcendent moment is the band's cover of Bob Dylan's "Like a Rolling Stone"—a point where auteurs Jagger and Richards speak to progenitor and progeny alike, a moment where past and future converge, where America and England meet amid the field hollers of McKinley Morganfield's Mississippi Delta and the clacking of Jann Wenner's word processor, a fourth-dimensional common ground where the '60s and the '90s converge to ask that timely yet timeless question: "How does it feel?" Either that, or it's a lame joke with the world's longest setup.

Despite its abject laziness, *Stripped* is at least listenable on the car stereo (right, Wes?). No such luck for David Bowie's *Outside*. Creating what he terms a non-linear Gothic Drama hyper-cycle (whatever that is) about Nathan Adler (whoever he is), Bowie sets out to prove that he's no entertainer, he's an *artist*. In the process, the Thin Trite Duke indulges every bombastic impulse imaginable: a two-minute intro? Why not. Narration by a child? But of course. He forgets that he earned his hit license to print money by making music, as in shake your booty. On this digipak disaster, Bowie is so pretentious he makes Roger Waters sound like a roots rocker. Suffice it to say that the song title "I'm Deranged" serves as truth in advertising.

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the pound and blood transfusions on demand, the Stones and Mrsl. Bowie have lost touch with the rock’n’roll spirit. I disagree. Both of these albums display a contempt for authority as strong as anything the Sex Pistols ever conjured. Unfortunately, the real victims of this latest Rock and Roll Swindle are the poor suckers who bought these records.

— Allen St. John

DOC WATSON: The Vanguard Years
Vanguard 153/58-2 (4 CDs only); Mary Catherine Aldin, prod.; Mitch Greenhill, Jeff Zaraya, engs. AD13; TT: 2:55:00

Doc Watson’s Vanguard recordings span the period from 1963 to 1971. Shortly after he left the label, Doc achieved a measure of mainstream success by appearing on the Nitty Gritty Dirt Band’s popular Will The Circle Be Unbroken? 3-LP set. The Vanguard years were fruitful for Watson, as he established his reputation largely on these consistently excellent recordings. They’re loaded with gems and offer some of the richest slices of American folk music one is likely to find. Watson always brings a warmth and an understanding to his mostly traditional material that invariably have the ring of truth. A fine singer who’s equally strong on guitar, banjo, and harmonica, Watson shines throughout these 64 hillbilly, folk, and blues songs.

The fourth CD in this set offers over 50 minutes of previously unreleased material, some of it genuinely superb. Starting with six tracks of Watson in duet with the late, great Merle Travis (from whom Watson copied his finger-picking style and for whom he named his son), there are a number of highlights that belong in the collection of any Doc Watson aficionado. The Watson/Travis version of “Cannonball Rag” should be heard by all guitar fans. Doc’s quicksilver runs and breaks perfectly complement Travis’s loping, rhythmically intricate comping.

Elsewhere on disc 4 are unreleased duets with Merle Watson, all from live concerts, that are frequently scintillating. “I Got a Pig at Home in the Pen” is the kind of thing Doc and Merle seemingly tossed off at will — folksy, downtown, and real.

On the downside, sound quality on most of the unreleased tracks is marginal: alternately mono and stereo, tape dropouts that are sometimes severe, and a distant quality to many of the tracks, especially on the vocals. Not audiophile quality, by a long shot.

The first three discs are an intelligently programmed collection of the best from Watson’s nine Vanguard albums, but there is a big problem. With only about three hours’ worth of material spread over four discs, one can’t help but feel ripped off. Certainly, there’s a ton of great Doc which could have fleshed out this set, and gone a long way to justify its hefty, full-retail price.

Still, it’s hard not to enjoy the programming and overall good-sounding transfers of the previously released material. If you don’t get goosebumps when you hear Doc’s a cappella “Talk About Suffering,” maybe folk music ain’t your bag. Despite a shortage of tracks, this Docbox is a good collection.

— Carl Baugher

STEVIE WONDER: Natural Wonder
Dr. Henry Panson III, Tokyo Philharmonic Orchestra Motown 314 530 546-2 (2 CDs); Stevie Wonder, prod.; Gary Adante, Robert Arthritis, Chris Bellman, engs. AD13; TT: 105:05

Recorded before huge stadium crowds in Osaka and Tel Aviv in 1995, Natural Wonder is a well-rounded, lively, and intelligently paced two-CD set. Prevailing pop convention seems to dictate that live albums include new tracks, and Stevie has included four here (“Stay Gold” was originally from the movie, The Outsider). The new songs are virtual throwaways, but the rest of the album more than makes up for a lack of substantial new material.

Playing mostly songs he’s been performing for decades, Wonder sounds as involved and involving as one could hope for. Thankfully, his tendency to ramble on endlessly in concert with protracted, painfully redundant speech has been edited completely out of these tracks, leaving a fine collection of spirited tunes. “Love’s in Need of Love Today” is revitalized with all the philosophical urgency needed to carry the still-topical sentiment. “Higher Ground” is given a joyous performance that can only be described as uplifting. “I Wish” is urgently funky, while turn-on-a-dime versions of “ Sir Duke” and “Superstition” make this the kind of release Stevie Wonder fans will drool over.

The one outright misstep is the hopelessly trite, cloying, and calculated “Mr. & Ms. Little Ones.” While Wonder’s sentiments can hardly be questioned, his songwriting doesn’t do them justice. File it with that other weak trifile (included on disc two), “I Just Called to Say I Love You.”

Stevie’s backup group plays with polished precision. Bassist Nathan East is especially valuable—he seems to know these songs like the back of his hand. The whole group contributes yeoman work, with only guitarist Rick Zunigashortchanged in the mix and arrangements.

The Tokyo Philharmonic is used strictly as background garnish. To make matters worse, the orchestra is mixed so low and recorded so poorly as to resemble nothing more than a cheap synthesizer. Otherwise, the tracks are detailed as hell, with tight, satisfying bass and natural warmth on the vocals. In other words, a good digital mixdown. Except for the ridiculously re- cent orchestral strings, there’s little to complain of, especially considering the live sources of the recordings.

Though Stevie Wonder hasn’t offered much recent, compelling evidence that he still has something to say, lyrically or musically, there’s no denying his skills as a singer and musician. As this set proves, he’s a scintillating performer, fully deserving of his legendary R&B reputation. Now, if he’d just come up with something that breaks a little ground and pushes the envelope a bit, he might well garner a whole new generation of Wonder fans. Still, for those who’ve come this far with him, Natural Wonder is a welcome addition to his discography, adding quality balance to the studio albums.

— Carl Baugher
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New!
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Audio Artistry Dvorak

Editor:
I read with great satisfaction Shannon Dickson's review of the Dvorak loudspeaker from Audio Artistry. He has captured in words the very essence of this product's sonic performance. Obviously he enjoyed the natural sound of these unique dipole, and was able to set aside preconceived notions about how a speaker should sound that might have been derived from his listening experiences with box-type designs.

The ultimate reference for judging a speaker's performance is live sound. I make it a point to pay great attention to how something sounds and the impression it creates in my mind. To keep myself honest—and, let's not forget, to enjoy myself—I regularly attend concerts of the San Francisco Symphony and local chamber-music performances. I also record various live events to have familiar playback material to evaluate designs and to compare them to my acoustic memory.

I would be the first to admit that the Dvorak still has a distance to go when compared to live sound. Even in its imperfection, the speaker achieves a more natural balance of the essential elements that are necessary for creating the illusion of "the real thing" than do most other speakers. Our newest product, the Beethoven, introduced at the recent '96 WCES, carries the Dvorak design concept a significant step closer to the goal, though at a significantly higher price.

With all our speakers we attempt to build transducers—that is, devices that convert electrical voltage to sound pressure at the listening position without adding sonic artifacts or removing information in the process. To achieve this requires engineering compromises, since we are working with the physical limits of drivers, components, cabinets, and listening rooms. Choosing the best compromise means that we must understand which distortions are perceptually significant and must be minimized. Measurements of frequency and time response, or of harmonic distortion, etc., and their popular interpretations, do not necessarily correlate with what is perceptually significant. Yet proper measurements and interpretation are absolutely essential to control the parameters the mind deems important for creating the illusion of "being there." Fully understanding test-equipment capabilities and using appropriate test methods can minimize the generation of misleading visual data. This is where a lifetime of study, experimentation, and analysis pays off.

The review by Mr. Dickson is encouraging confirmation to me that we are pursuing the right goal. Listeners do recognize the greater naturalness of sound from our approach to speaker design. Sadly, many audiophiles seem to have a built-in expectation of what a loudspeaker should sound like, because they have become accustomed to the almost generic distortion characteristics of box-type speakers in rooms.

I know Mr. Dickson has spent many hours listening to the Dvorak, and his writing about it turned into a true labor of love. On behalf of the entire Audio Artistry team, I thank him for all he has given.

Siegfried Linnewitz
VP Engineering, Audio Artistry

Aerial Acoustics 10T

Editor:
We would like to thank Mr. Phillips, Mr. Atkinson, and Stereophile for the excellent review of the Aerial Model 10T. We especially appreciate the time and energy required to produce such a thorough and perceptive evaluation.

The Model 10T's design goal was a compact yet very wide-band and dynamic system with exceptional transparency, detail resolution, spatial accuracy, and neutrality. We especially tried to eliminate colorations of any kind, tonal inconsistencies between drivers, and dynamically related performance changes.

In addition to providing high performance, we work very hard on all Aerial products to maintain consistently high levels of design, quality, and reliability that are at least the equal of much more expensive products. These factors are difficult to evaluate in any test, usually revealing themselves over time in terms of extended life, consistent performance, and increased owner satisfaction.

Regarding image depth, a confined listening environment with the speakers near the wall behind them is consistent with reduced image depth. The 10Ts are very capable performers in this area. Optimizing the microphone axis would improve the measurements. The stand moves the typical listening axis from just above the midrange to somewhat below it. If measured on this axis, the measurements improve, with the step response looking considerably more coherent.

We have tried to make the 10T a relatively easy load to drive without sacrifices elsewhere. Over the past few years we have heard of no problems from customers using a broad selection of solid-state and tube amplifiers.

We are pleased that Mr. Phillips enjoyed the performance of the Model 10T so much. We believe his new listening room will provide for an even greater appreciation of the Model 10T's capabilities. We hope that other listeners will have the opportunity to experience for themselves the performance capabilities that Mr. Phillips enjoyed so much in the Model 10T.

Michael Kelly
President, Aerial Acoustics

AudioQuest 7000 FE5

Editor:
Lurking just below the surface of Michael Fremer's comprehensive review of two phono cartridges lies this question: How could a cartridge Scan-Tech makes for AudioQuest possibly be either as good a performer or as good a value as the cartridge Scan-Tech makes on its own behalf?

Maybe I'm a little too sensitive, but I think it's a worthy question and one whose answer would aid in the view of many other audio products. There aren't as many manufacturers as are there are brands. In fact, many of us aren't manufacturers at all. A manufacturer's job is to keep their equipment busy. A brand's job is to reliably supply a quality of product or service that will maintain or raise the value of the brand. Even companies that clearly are manufacturers with serious factories could also be viewed as assemblers who are dependent on goods manufactured by others. Most speaker suppliers are justifiably thought of as manufacturers, and yet the
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heart of their products are usually drivers manufactured elsewhere. Such companies would be quick to point out that the drivers made for them are proprietary and would not exist except for their involvement—but they don't make them. The ability to make and design these drivers resides with the driver manufacturer.

I resisted calling the drivers the "heart and soul" of the various speakers. The "soul" would more nearly be the context created by the individual designer, the way the drivers are used, and the quality of the product's performance. If you like or don't like these speakers, that is not a comment on the merit of the drivers, but on the merit of the application.

Back to phono cartridges. I believe the Scan-Tech Three to be the finest phono-cartridge design and assembly team in the world today. In terms of my desire to use and sell a superior cartridge, Scan-Tech represents the finest "raw material" available. This incredible organization of talent and expertise has been working to fulfill my concept of what a cartridge should have been since we started working together in 1987.

Starting even earlier, the same energy was put into creating the cartridge that Stig and Jonathan think represents the best possible compromise. Those are important words!

No audio product is anywhere near perfect. The amount of legitimate variation among quality products is proportional to the distance between what we can do and what we want to do. The further we are from perfection, the more imperfections have to be juggled and controlled—the more legitimate opportunity for disagreement over which types of distortion interfere more or less with the reproduction of music.

The obvious differences between the two cartridges in Michael's review represent legitimate variations as to which aspects of a musical performance are more or less important to the final objective: that the hardware do as good a job as possible of facilitating the software (music's) ability to seduce the listener.

That Stig and Jonathan have a priority system slightly different from mine does not make either of us right or wrong; we all acknowledge that. The AQ cartridge is the successful result of Scan-Tech applying all of their talent to making the cartridge that I believe is the most effective vehicle for maintaining the power and emotion of the musical experience. Bill Low AudioQuest

PARASOUND D/AC-1100®® & D/AC-2000

Editor: The Parasound team is very grateful for Bob Harley's review of our D/AC-1100®® and D/AC-2000 Ultra Digital to Analog Converters.

Please return the D/AC-1100®® to Parasound as soon as possible. This unit was obviously damaged in shipment and we'd like to inspect it.

Bob's overwhelmingly positive review of our D/AC-2000 Ultra is gratifying for several reasons.

First of all, it's a real source of pride and accomplishment to have a Parasound model so highly praised by the one expert in the one forum which we believe has the greatest influence on enthusiasts and prospective buyers of D/A converters in this country and parts of Asia. Bob's conclusions are echoed overseas by two German high-end magazines, Audio and stereoplay, which recently bestowed their very highest honors on our D/AC-2000 Ultra: Referenzklasse and Absolut Spitzennklasse Uberrefenz.

Next, musical enthusiasts and serious hobbyists should be assured that, with enough experience and science, digital reproduction has sufficiently advanced to where we can achieve outstanding musical performance that correlates directly with outstanding technology and design. The superiority of our D/AC-2000 Ultra reflects the sophistication of its UltraAnalog AES21 digital receiver and D20400A DAC, component parts whose science verges on fine art.

Finally, it is gratifying to know that Parasound's mission to capture even that nth degree of perfect musical reproduction at (in Bob Harley's own words) "bargain" prices is continuing to receive the recognition it deserves. Our D/AC-2000 Ultra is now the second Parasound model to be hailed by Stereophile as a benchmark for performance in its price range. (The first is our HCA-2200 II, which is just about the least expensive and most powerful of Stereophile's Class B recommended power amplifiers.)

Thank you again for your interest and enthusiasm for Parasound.

RICHARD SCHRAM
President, Parasound Products

AUDIO NOTE KASSAI SILVER
Editor: I made the sign of the cross, like an old Padre. I hadn't even read the review, but when I saw the Stereophile fax on the monitor I knew that Monsignor Scull had finished his work. Lest anyone doubts, there is no question that the Scull-style review process is as objective, thorough, and insightful as is humanly possible. He and Kathleen live these reviews.

Mike and I were flattened and excited when Jonathan called to ask for an Audio Note product for review. We were also a little nervous. My god, Jonathan writes for Stereophile, the most influential audio magazine in the world and the same magazine that referred to the Cary 300SEI as a "tone control"! Was Stereophile really ready to understand what an amplifier like the Kassai is all about? Obviously, Mr. Scull was totally ready. Mr. Norton? He may need a little more persuading. The Scull review captures the heart of our design aesthetic—we make amplifiers for people who want to forget about arcane audiophile issues and instead focus their attention on the appreciation of music. To do this, we strive to recover the "entire musical construct" and retain the proportions of the original "musical gestalt."

Audio Note was founded on the principle that static distortion measurements and testing into hypothetical loads cannot tell us how much of this musical gestalt we will recover, or what condition this musical information is in after it is recovered. This is why Tom Norton's ongoing question, "Does an amplifier sound 'good' because of the way it measures, or in spite of it?" is so relevant.

If the measurements we make do not reflect our listening experiences in an obvious way, then our measurement techniques are simply not reality-based. Let's just say we all agree that amplifier distortion of one kind or another is bad. To make a better amplifier, we should first find out what distortions are evidenced in the existing amplifier and then set about eliminating them. Trouble is, we cannot tell with any certainty what distortions we have to fix unless we look at the amplifier's performance into a specific speaker. Its distortion spectra will change with every speaker we choose. So... why not look at a musical signal going into the amplifier under test and compare it to the signal that comes out of the reviewer's speaker? The reviewer is doing roughly the same thing when he comments on how effective the equipment is at recovering what he imagines is on the LP or CD. Why shouldn't our bench testing evaluate these same "real music" waveforms the reviewer used? Then, at least, the reviewer and the bench tester are looking at the same thing. Wouldn't this be more "real world" than a simulated load? Evaluating the performance of the amp-speaker combination in the frequency, amplitude, phase, and time domains might then relate directly to what the reviewer heard. If the load is not a real speaker playing music, it is not a "real load!"

At Audio Note, we design our speakers' impedances to reflect the inverse of the amplifier's output impedance and power response curves. In other words, we design the amplifier, speaker cable, and loudspeaker as a unit. We believe that the only way to achieve meaningful results is to design complete systems in which each component interface is carefully considered. The only reason I can think of for using a "simulated speaker load" or a power resistor to measure an amplifier is: It eliminates the room, the speaker, the speaker cable, and the music from the equation. Do we really want to do this? Your present measurement strategies eliminate all of these real-world conditions—why? I say,
measure the amplifier at Jonathan’s famous ribbon chair!

When we measure components under unreal and hypothetical conditions, we can only expect results that are synthetic and difficult to comprehend.

Reviews in Stereophile of components like single-ended amplifiers and the new wave of horn loudspeakers should really serve as wake-up calls to the whole audio industry. Now is the time to invest in a new pair of glasses. We need to know more about which engineering decisions really can make music listening more enjoyable. We need to develop more meaningful ways of evaluating what we have created. Most important, it’s time to remember why we go to all of this effort: to make musical culture and understanding more important parts of our lives.

HERBERT REICHERT
Audio Note USA

MELOS MA-333 REFERENCE
Editor:
Perhaps the greatest compliment that can be accorded an audio designer is to be told that you’ve achieved “Less is More” status. Nothing is more frustrating to the well-trained ear or music-lover than the all-too-frequent exclamations of audiophile neophytes’ misinterpretations of contact distortion and second-harmonic distortion as “detail” and “dynamic contrast.”

Russ Novak’s talent and insights are a welcome relief and, in our opinion, a necessary service to the audiophile community. In recognizing and illustrating the direction toward musical truth in audio reproduction that the addition of a Phono- tiometer can bring, Mr. Novak both eloquently and amusingly reinforces this view. (He likens the removal of these distortions to “when your partner stops complaining.”) Bravo, Mr. Novak!

The technical prowess shown by the Melos MA-333 Reference preamplifier (as borne out by the measurements by Tom Norton) is a product of many years of labor and research; we are extremely pleased and proud to have effected this with an all-tube-gain, zero-feedback design.

George Bischoff and I are both proud and elated to have developed a truly new technology in an industry resplendent with “Snake Oil” and “Get Rich Quick” tweaks.

Beyond this, we cannot stress strongly enough our admiration for both Stereophile’s and Mr. Novak’s courage and insight in recognizing and extolling the Phono- tiometer (along with the MA-333 Reference) and its important role in bringing us closer to the musical truth.

MARK PORZELLI
Melos Audio, Inc.

METAPHOR 2
Editor:
One of the great things about Wes Phillips reviewing a product is that you know there will always be some musical golden nuggets. Any reader who has not heard the recordings Wes used in his Follow-Up of the Metaphor 2 should, as he suggested, go right out and get them. The Ravel is everything Wes says it is (though the air conditioner that comes on three minutes into the Allegro is a bit distracting), but the haunting and emotionally draining Corigliano is an absolute stunner.

We could talk about the many exceptional attributes Wes found during his review, but why? Parts are parts; it’s the musical whole that matters. Wes found his time with the Metaphor 2 “immensely enjoyable,” and that “...the Metaphor 2 will transport you to the realm of music. And ultimately, that is what it is all about.”

One of the keys Wes found to getting great performance from the Metaphor 2 was proper positioning. Contrary to many, we feel the most important relationship in speaker positioning is not that of each speaker to the room, but of the speakers to one another. In any multiple-speaker playback configuration, you must establish the composite soundfield by properly integrating the speakers. Then you adjust the entire soundfield within the room by

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moving the speakers while maintaining relative position between them. The bottom line for ensuring musically satisfying performance is that the distance between speakers is more important than the distances to the walls. With the Metaphor 2, the distance between speakers (center to center) is always between 76" and 80". Toe-in varies based on listening position. The distance to the rear wall is more variable, but is typically in the range Wes found best: around 25".

With many good things Wes found, there is an area of concern, however. One of the primary design criteria of all Metaphor loudspeakers is that you can drive them easily with any amplifier. The load must be simple and the sensitivity high. This continues to be a significant advantage that Metaphors enjoy over most of their competition. You get to buy the amp that makes music for you, not just the one that has enough power. So how could Wes have found that the new 2 needed more power than before?

The sensitivity of the Metaphor 2 has not changed: 91dB/2.83V/1m. The Metaphor 2s in the Follow-Up and the original pair that Wes reviewed are electrically identical, with enclosures and ports of precisely the same dimensions and relative locations. Since all parts and speakers are computer-matched, we know that sample-to-sample variation is not a possibility. Further, upon receipt of Wes's Follow-Up, we checked the sensitivity of the original pair John Atkinson measured in Santa Fe (we still have them) against a pair from the same production run as the Follow-Up samples: absolutely the same, as expected.

Without measurements from John on the latest 2s, we'll have to wait to examine the review speakers. In spite of Wes's great results, it is possible that they were damaged during shipping, break-in, or the review process itself. Certainly Wes's difficulty in positioning the speaker to make music argues for this possibility — especially when our dealers and distributors have commented on how much easier it is to get the revised 2 right. Given the multiple woofers and the great overlap of the midrange and woofer, it is possible that a damaged driver could be perceived as merely a slight balance change. But the load shown to the amp, particularly in the bass, could go from simple to quite difficult. The Krell wouldn't mind, but the VAC, with its higher output impedance, might have difficulty.

It is clear that the Metaphor 2 remains a cinch to drive. We can only wait for the return of the review speakers to solve the mystery. In the meantime, apologies to Wes for having to go through the long break-in process (sorry, Wes; we didn't have time to break-in this pair like we did the original review samples), and thanks to him and John for going the extra mile with the Metaphor 2.

BILL PRUGH
President, Metaphor Acoustic Designs

MICHAEL GREEN DESIGNS
AUDIOPOINTS

Editor: Just a quick note on two reviews in the December 1995 issue of Stereophile. Special thanks to Bob Deutsch and Jonathan Scull for commenting on their having used our "AudioPoints" to enhance the performance of the Balanced Audio Technology amp and preamp, and the Manley 440 amp, respectively, that were being reviewed. They are right; this is an extremely easy, inexpensive, and retrofittable way to upgrade most components and speakers.

What they didn't mention, and what your readers may not know from the brief "Recommended Components" listing, is that the AudioPoints come not only as simple flat-flange "cones," but also with a wide variety of integral threaded shanks to fit the threaded inserts in most audio components. Introduction of the threaded shank into the AudioPoint design changes the resonant characteristics of the AudioPoint itself. As a result, the shape of the threaded versions must be modified to maintain the highly effective energy-transmission properties of the standard, unthreaded design. Our dealers have a list of the thread types and sizes used by many equipment manufacturers for their component feet or spikes, to help users find the right AudioPoint replacements.

I am often asked why AudioPoints are made of brass. What I have found over time is that (surprise, surprise!) things tend to sound like what they are made of. So if you want to reproduce music, where possible use materials that are used in musical instruments. Generally this means various woods and good-sounding metals, especially...brass. Conversely, stay away from the polymers, graphite, rubber, glass, sand, stone-like substances, etc., which you find in hi-fi but not on the concert-hall stage.

Hopefully this will help readers who want to do some "mechanical transfer" experimentation for themselves get "pointed" in the right direction.

Michael Green
Michael Green Designs/RoonTune

Erratum: In Shannon Dickson's January article on HDCD™ (Vol.19 No.1, pp.107-119), a copy-editing error changed Shannon's meaning: the final two sentences just before his "Final Thoughts" section on p.119 should have read: "Frankly, I'll be surprised if the sonic attributes possible from doubling the sample rate, perhaps with the kind of insights gained by Pacific Microsonics during the creation of the process, aren't more pronounced than those now produced by decoded HDCD. Time should tell." —John Atkinson
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Tonearms
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<th>Monster</th>
<th>M:1500 Balanced</th>
<th>1.5 m</th>
<th>List: $500.00</th>
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<tr>
<td>XLO</td>
<td>Type I Interconnect</td>
<td>1.0 m</td>
<td>List: $275.00</td>
<td>$160.00</td>
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<td>Tara Labs</td>
<td>RSC Reference</td>
<td>1.5 m</td>
<td>List: $255.00</td>
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<td>Tara Labs</td>
<td>RSC MasterBal.</td>
<td>0.6 m</td>
<td>List: $355.00</td>
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<td>Tara Labs</td>
<td>RSC MasterGen2</td>
<td>1.5 m</td>
<td>List: $520.00</td>
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<td>Tara Labs</td>
<td>RSC Ref. 2000</td>
<td>10 ft.</td>
<td>List: $450.00</td>
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<td>Tara Labs</td>
<td>RSC Master</td>
<td>10 ft.</td>
<td>List: $1050.00</td>
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<td>Tara Labs</td>
<td>RSC Master C-2</td>
<td>14 ft.</td>
<td>List: $1420.00</td>
<td>$690.00</td>
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<tr>
<td>XLO</td>
<td>Type 6 (Speaker)</td>
<td>12 ft.</td>
<td>List: $500.00</td>
<td>$275.00</td>
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Welcome to the latest “Recommended Components” issue of Stereophile—at once both the most popular and unpopular single thing we publish. First, though, let me congratulate this month’s letter-writers. This particular “Letters” section is the best I’ve ever read, and that’s set against a very high standard of letters in every issue. We truly love what you have to say, even—or especially—when you disagree with us. I wonder if letter-writers feel the same mentor/protegé relationship with John Atkinson that most of our writers experience. I hope so—JA works as hard to usher your writings into our pages with grace and accuracy as he does those of our “official” writers. (I ran across a few folks this time whose writings might look great in the more official parts of the magazine.)

Anyway, it’s easy to see why “Recommended Components” is popular: here, in one place, is what Stereophile thinks about what there is to buy out in the marketplace. In instances where our reviews have been ambiguous, or where writers differ in their judgments, or where subsequent experience has better informed our collective opinion, RC is the method through which this information is communicated. And for those of you who don’t regularly read Stereophile (shame, shame!), “Recommended Components” gives you the best of the last six issues, mixed in with the best of the rest. (Please, though, don’t buy anything based solely on its writeup in “Recommended Components”; we strive for accuracy, but one paragraph can’t possibly tell the whole story.) Some of the unpopularity of “Recommended Components” is also easy to understand. This month, for instance, JA decided that components that hadn’t been auditioned within the last three years had to be dropped, even though dropping components is the fastest route to unpopularity where it really counts: with readers.

Our “need to drop” is a practical one, and for more than space considerations. As some readers have pointed out: Why do we seem to recommend almost everything we review? Dropping a component you happen to own doesn’t, of course, make it any less of a great product than it was before, though many readers respond as if that was what we were saying. It’s just that we no longer feel familiar enough with it to compare it responsibly to what we’ve reviewed more recently. Dropping a component from “Recommended Components” doesn’t create obsolescence any more than a continued listing prevents it.

The only area where I think you could come close to alleging obsolescence is in digital processors and transports—and even there, I feel that the tremendous leaps we frequently acclaim could benefit from historical perspective. What, for instance, would it be like to do a historical retrospective of digital—like the recent Vermeer show at the National Gallery in Washington? Starting with the Sony CDP-101, moving through the Meridian HCD1, the Accuphase DP-80/1IC-81, up through the early Thetans, the first CAL and PS Audio players, the Manley/Ultra Analog A/D, the early and late Audio Researches, all the excellent Krell products, the landmark Mark Levinson No.30, the expensive Sansys, Pioneers, and Marantz’s in the more affordable arena, the first Audio Alchemy, the beautiful Denon pieces that graced this cover of our May 1994 issue, H3CD* in many different products, the achievements of Sonic Frontiers, the later Audio Alchemys, now the Classe, the many later Meridians in all their permutations, and lately the mighty Spectral—the mind fairly boggles at all these different products, plus their updates, Mk.IIs, point fives, and generations one through five.

Though I know I’ve omitted some important companies from this list, even so, at one time or another just about everything listed has been hailed as the latest and greatest—certainly so if you include value-for-money as a criterion. It strikes me that if you add up all the “clearly audible,” “significant,” “mind-boggling,” “massive,” and “astounding” differences that have been heard during this long trek, you would end up with something quite a bit better than live music. Clearly, that hasn’t happened.

I think what you’d actually find, were you to do such a retrospective, is that the difference between the most recent “best” and its immediate predecessor is still pretty great—but that the differences as you went back through the many ages of digital are much less big than they seemed at the time. (As we’ve tried to remind you on many occasions.)

This might seem a polemic against Robert Harley, but nothing could be further from the truth. Every reviewer at Stereophile, including yours truly—yes, I used to do product reviews—has described amazing differences heard in (usually) the latest digital reproduction. RH has made more such pronouncements, but only because he’s listed at eight out of the nine positions of our digital batting order. (Spring training is here, and I just wanted to get in a baseball reference before JA did, at least this year.)

This is just a “heads up” warning of the inherent weaknesses of reviewers. In wine writing, the “vintage of the century” happens at least once a decade, but with good weather it can happen every two or three years. The alternative is something like “of all the great cabernet sauvignons I have tasted, this is one of them.” A wine publication with such a Hirschian attitude would soon go bust. Wine enthusiasts don’t read their magazines to hear how ordinary everything is, but how extraordinary the latest vintage/grape/region/producer is. And buying “used” wine isn’t like finding bargains in used hi-fi equipment: the “recommended components” of vintages past are much higher in price than the latest releases.

This doesn’t relieve magazines of a responsibility to balance our recommendations against the demands we’re placing on your wallets, but readers have to provide the largest measure of that balance. As digital reproduction—all sound reproduction—continues to improve, we will continue to herald its wonders. You will read what we write and make your own decisions. It’s your pragmatic judgments—of us and of the components—that determine what really deserves a recommendation. Caveat emptor, but remember: emptor is king (and queen).

—Larry Archibald

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