SEPTEMBER 1995

PEAKER AR, INFINITY, PEAKER AUDIO PHYSIC PEAKER

CHICAGO SHOW REPORT

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"The idea that intellectual property in a Net-based economy can lose its value horrifies most owners and creators. They'd better get over it."
—Esther Dyson, "Intellectual Value"
_Wired_, July 1995, p.136

One of the conclusions Esther Dyson drew in her recent article in _Wired_ was that the one commodity in scarce supply in cyberspace is _attention_. I agree, having found the Noise/Signal Ratio to be just too high for effective, easy electronic communication. As magazines and newspapers are the longest-lasting traditional "content providers," the subject of how to transfer their content-providing skills into the new electronic era occupies a lot of publishers' thoughts these days.

As a sidebar to this debate, I included an e-mail exchange in this month's "Letters" that you might find illuminating. A new reader, Bill Rothwell, needed Stereophile's most recent "Recommended Components" listing, so I mailed a back issue to him. Bill responded that, as he had found someone making "Recommended Components" available on the Internet, he didn't need the paper magazine after all.

There are two points to note from this. First, and most important, the contents of every issue of Stereophile are registered with the Register of Copyrights in Washington, DC. Anyone who reproduces or reprints anything from this magazine in any form without our permission is infringing our copyright and can incur a hefty statutory penalty.

Second, the _Wired_ article implied that the days of magazines printed on paper and underwritten by paid advertisements were almost over, meaning that it behooves magazines both to go online and to find new ways of generating income. We've thought about launching a Stereophile Home Page on the World-Wide Web. We've thought about starting a Stereophile computer bulletin board or a Stereophile forum on one of the online services. We've thought about making Stereophile's writers and editors available for online discussions. We've investigated making Stereophile's editorial contents available online, but we cannot yet see how it could be done on an economically viable basis.

Oh, and the story I started with ended happily in that the pirated list Bill Rothwell found on the Internet was just that—a list. The printed "Recommended Components" was so much more informative that Bill decided to keep the back issue.

To change the subject rather abruptly, I'm pleased to announce that Stereophile contributor Wes Phillips joins the magazine's full-time staff here in Santa Fe this month as Equipment Reports Editor. Wes has full responsibility for doing for Stereophile's Equipment Reports section what Music Editor Richard Lehnert has done so successfully for our Record Reviews section. I'll leave it to Wes to introduce himself.

—John Atkinson

**Happy to be Here**

I was 2½ years old and I stared with fascination as a red vinyl disc spun 'round and 'round, playing the "Davy Crockett Theme." "Play 'nother one!" I demanded. Thus are obsessions born.

When, in high school, I decided that I wanted headphones in order to listen to "Whole Lotta Love" pan through the center of my head, I opened up my stereo to see how to add a headphone jack. I knew nothing about electronics, and was stunned to find that it made sense! Here endeth act two.

In order to pay for college, I worked in a record store. Then another one. And another. Before I knew it, it had become my career. After marriage, my wife and I lived in Peru, where she studied Quechua and I taught English and studied Andean wind instruments. Returning to the States, I fell into a job managing an audiophile record press in the glory days just prior to the introduction of Compact Disc. I know how buggy-whip manufacturers felt upon sighting their first automobiles; we bought a first-generation CD player and tons of software and, after listening, breathed a sigh of relief: "This will never catch on!"

I was also production manager at a classical record label—getting out just as we began to convert our production to CD. (The two events were not related.)

Let's see, that doesn't include working in New York's most comprehensive classical-record department, four years on the sales floors of two of New York's high-end hi-fi shops, or my writing tenures at _The Audiophile Voice_ and _The Absolute Sound_.

I am a recovering Audiophiliac. I try very hard to keep my reviews rooted in reality—at least as I experience it. This means that I sometimes hear things that I cannot explain or at times even comprehend. But if I hear them, I must report them. I try to keep my threshold of gullibility high, and to separate correlation from causation whenever possible. I feel fortunate to be able to do what I enjoy: to write and think about music and music reproduction.

And now I've come to Santa Fe—to an audiophile, the equivalent of a warrior's ascent into Valhalla. Humbled, I stride down the corridor of heroes: "Hail, TJN! Hola, JGH! Accolades to the high-fathers LA & JA! Who ordered the pepperoni with extra cheese?" Happy to be here.

—Wes Phillips
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A great poem?
Editor:

Roses are red,
Violets are blue,
Stereophile goofed
in their ratings review.¹

Reviewers are human
and could err, too.
It's good to see JA
own up to it, too.²
Bravo to LA, Stereophile,
and its crew.

GREAT

Allen S. Dizon
New York, NY

A great pleasure?
Editor:

My copy of Stereophile's Robert Silverman
Concert CD arrived in the morning mail. I listened to it almost at once. The
musical experience was first-rate (especially the Schumann Sonata), and the
recording was superlative—every bit as good as the ad in Stereophile had led me
to hope it would be. You and your colleagues are splendid technicians and
clearly have musical ears. A great pleasure!  

Professor G.R. Creeger
Wesleyan University, Middletown, CT

Glad you enjoyed Concert, Professor Creeger. Robert Silverman's next CD for Stereophile
will be of the Liszt B-minor Piano Sonata, which we recorded with 20-bit resolution
using the Nagra D recorder and the Schoeps “Sphere” and B&K omnidirectional micro-
phones. Release is scheduled for the end of the year. The two-CD Concert set—featuring
piano works by Bach, Schubert, and Chopin as well as Schumann—is available for $15.95
plus $3 S&H. Phone (800) 358-6274 for credit-card orders.

A great magazine?
Editor:

I must congratulate you for putting out

a great magazine. The thing that is most
impressive to me is that, besides being
large, informative, entertaining, and gen-
erally fun to read, it's always there. Every
month, Stereophile always arrives on time.
I don't know how you do it, but I'm sure
glad you do.

Stan Davis
Buena Park, CA

It's down to a lot of hard work from a talent-
ed bunch of people.

Compress?n
Editor:

Each month, disgruntled readers demand
an end of their subscription to your fine
journal.

Allow me to broach a topic that may
have you guys cancel my subscription.
The only time some of my former
favorite, now dusty records sound good
in my high-end system is when I hear
one over the radio, compressed!

I suspect that a defeatable outboard compressor will let me enjoy the clas-
sics (Southside Johnny, Robin Trower,
Little Steven) again.

Would that be okay with the high-
end police?

Where would I shop for one of these?

Hitch Paprocki
Tucson, AZ

dbx used to have a range of outboard compressors and expanders available. I suggest
you prowl the classifieds, Mr. Paprocki. —JA

We regret that resources do not permit us to reply individually to letters, particularly those
requesting advice about particular equipment purchases. (We are also unable to take tele-
phone 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.

A Hot Topics?
Editor:

Well, here I am, actually writing a letter to Stereophile. It seems a big deal to
me, as I have read extraordinary epistles many times in the several years I
have been a subscriber. I always figured it would be some hot topic of debate
(cable sound, sexism in the High End, et al) about which I could no longer
restrain myself from voicing an opinion that would hurl me over the edge and
into Microsoft Word to write to you. But alas, it is not so.

No, unfortunately I write to you today because I'm bored. United's flight
1041 from Washington to Dallas—two nice cities, neither of which I live in—is
sitting on the ground. And because reading Stereophile has helped keep me from
getting sucked into the vortex of the time-sucking abyss known as "weather-
related ground delays," I decided I would write to you.

I think Stereophile is a wonderful maga-

azine. But as I work in marketing, I feel
 compelled to tell you why. Getting input
from readers that says your publication
rocks is great; better still is having them
tell you specifically why it rocks, so you
can do more of it. So here goes.

First, the writing. When I get done
with Stereophile, I feel almost the same
way I do when I listen to good music—
because I read something that the writer
cared about writing. Your reviewers can, by and large, flat out write. This is a plea-
ure. That said, I have to admit that I'm saddened by the departure of Corey
Greenberg and Sam Tellig. And I'm sad-
dened by their departure not only because I won't be reading about them
in Stereophile anymore but because (at
least in the case of Mr. Greenberg) their
new publications have emasculated
them. They are clearly not as free to
write in their own styles as they were in
Stereophile.

Which brings me to a warning: Do
not listen to the people who write to you and
ask you to censor the style of such writing.

¹The "Recommended Components" rating of Ni
c Griny models 2.5Fi and 1.5Fi should have been the
same.

²JA admitted goofing in response to the "LP's Can Be
Cleaned" letter in the July '95 issue [Vol.18 No.7, p.17].
Deep sea divers spend time in hyperbaric chambers to decompress.

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ADVANCED HOME THEATER

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WorldRadioHistory
Stereophile's writers are so good at what they do, I wager, partly because they are not subject to such scrutiny. So what if a writer wants to throw a few emphatic expletives in the narration? It can make articles more fun to read when they're colorful. We're all big boys and girls and have heard it before. (Anyone who claims they haven't is lying, needs psychotherapy, or both.) I laughed so hard I almost imploded while reading Corey Greenberg's riotous review of the Grado SR60s [June 1994, Vol.17 No.6, p.92]. It's just plain crap for some readers to expect you to censor such wit to protect a few people's sensibilities. A pox on them—continue to ignore them vehemently. Rob Hughes Evanston, IL

THE READERS ARE TO BLAME?

Editor:
The character of society seems to be spiraling downward at a quick rate. (Just look at TV programming, gangs, and violence.) I thought that a magazine of your caliber would choose to be above that level. But it seems that many of the letters that Stereophile publishes (and promotes) contain unnecessary vulgarities.

Therefore, I choose not to support your magazine any longer. Please cancel my subscription and refund the balance.

Daniel Piekarski Calumet City, IL

RESPECTABLE SOUND

Editor:
I have never written to Stereophile before but felt compelled to after attending the CES Home Theater & Specialty Audio show in Chicago. There seems to be a new guard of manufacturers entering the high-end audio scene, and the exciting news is that prices are finally coming down.

I heard very respectable sound from the JoLida room from a KT88-based integrated amplifier that costs less than $1000. However, what really floored me was the sound coming from the N.E.W./Diapason room. The Diapason loudspeakers, playing in a room the space of a large closet, were a revelation sonically and probably the most stunning speakers I've ever laid eyes on. What I heard was uncolored sound with transparency the likes of which I haven't heard from the best electrostats. Most surprising was the bass they were getting from these diminutive speakers—they weren't much more than 15" high. It sounded more like the power end I'd expected from a pair of B&W 801s. The fact that the system was running on pure DC (yes—batteries!) didn't hurt, either.

What was really gladdening is that the entire system costs less than what some rooms were using for their front end alone. Hats off to the new wave of manufacturers who are bringing in high-end audio at real-world prices.

Anthony Anderson San Diego, CA

NEIL YOUNG & HDCD

Editor:
I just purchased the new Neil Young CD, Mirror Ball (Reprise 45934-2). It has a tiny little HDCD® symbol on the back of the cheesy packaging. Sure, the cardboard box it's in is awful and potentially harmful to the disc, but it's the first popular HDCD release. Right? Let's hope all the rabid Pearl Jam fans buy this and an HDCD will go gold.

Why hasn't Stereophile reported on this prior to its release? A list of upcoming HDCD releases would be much appreciated. I haven't even listened to my new CD yet, but I assume my Audio Alchemy D/A will decode the HDCD and send me to Audio Nirvana.

Wooody Compton Tallahassee, FL

I listened to Mirror Ball, and while I have always appreciated Neil Young's music—and even have an affection for his collaborators on this disc, Pearl Jam—it struck me as an odd marketing strategy for the first non—Reference Recordings HDCD release to be of heavily distorted guitar grunge, no matter how realistic-sounding. However, for those Boomers among us, the great news is that the Jimi Hendrix catalog, as well as the first three Buffalo Springfield albums and a Neil Young retrospective, are to be remastered using the HDCD encoder. We'll keep you informed of new HDCD releases as we hear about them.

—JA

SINGLE-ENDED SUGGESTIONS

Editor:
How about a review on tube integrated amplifiers, such as the Sonic Frontiers and the Cary CAD-300SEI? Also, how about more reviews on single-ended amps in general?

Frank Cooney Cranford, NJ

See Robert Harley's review of the Cary in this month's Equipment Reports.

—JA

WIRED

Editor:
I have some comments on John Atkinson's "Wired!!" editorial in June [Vol.18 No.6, p.3]. He used the example of silver vs copper speaker wire as exhibiting an improvement "so large that it might almost be audible in a blind test." (emphasis added) This is faint praise indeed, and since silver has up to 8% better conductivity than copper, the R may still be lower with the silver wire if it is the same gauge. His example of changing the conductivity of copper bus bar with a mallet is indicative of the effect of hard drawing, which will increase the R about 3% over an annealed wire, assuming no change in diameter. In order to decrease the resistance, one would have to use the mallet to cleverly increase the diameter of the bar!

The discussion of grounds and balanced connections, while important, is not related to wire per se, but to circuit topology. The RFI and EMI shielding qualities of different cables is very dependent on construction methods: for example, the double twisted-pair StarQuad cable by Canare is very good at rejecting magnetic fields.

The flaw in JA's argument about cables that are terminated in a high impedance at the far end is that they are terminated in a low impedance at the near end, so this low Z dominates the equation.

His comment on cable microphonics is right on, however. I have noticed these piezoelectric and triboelectric effects very strongly in cheap microphone cable, and this could well be the reason why some cables sound different when used in low-level or even in line-level duty. JA's further comments on the other possible effects of different dielectric materials are also worth following up.

Marshall Buck, Ph.D.
Los Angeles, CA

CYBERSPACE CURMEUDGEON?

Editor:
Since I was cast as a bit of a curmudgeon (and demoted to instructor) by Jason Chervokas in July ["Sound Bytes," Vol.18 No.7, p.61], I would like to clarify a few issues regarding audio-related bulletin boards and Internet discussion groups. Mr. Chervokas quoted me correctly but conflated separate issues: the validity of information posted and the value of the many exchanges.

First, the problem I referred to in answering questions on bulletin boards is due to the effectively transient nature of posted information—certainly as compared with traditionally published material. Quite often a new reader will post a question that has been dealt with extensively in the very recent past. These readers have no knowledge of such exchanges and rarely consult the
LISTEN TO THE UNEXPECTED.

“...Regardless of where we stood, the presentation of voices and instruments remained stable and the tonal balance correct... (with the SS-M7ES, Sony) has achieved an unqualified success...”

Barry Willis, Stereophile®
“Vol. 17, No. 8, Aug 1994
FAQ (Frequently Asked Question) files that are available from many discussion groups. Consequently, through no real fault of the new questioner, I find I have already exhausted my patience and willingness to help.

Second, with few exceptions, there is no way for the questioner to qualify the validity of the answers. I have participated in efforts to answer questions and, at times, had my responses buried among nonsensical ones. Lest you think that I am being arrogant about this, I admit that I have been, in at least one case, among those who conveyed the wrong information. Still, how does the one seeking the information decide among the offered answers? Related to this, why would anyone rely on the opinions of strangers whose experience, knowledge, and biases are unknown? "Has anyone out there ever heard amplifier XYZ? What do you think?" Judging from the responses elicited by queries about devices well-known to me, I would never rely on any group of subjective opinions from Internet discussion groups. The only exception, of course, is in the situation where you actually know the responder.

Now, I must balance this tirade of criticism with some indication of why I still participate in bulletin boards and discussion groups. They are fun, and they can be informative. After wading through the puerile and the trivial, there is much else to be enjoyed, and some of that has not been given adequate attention by Mr. Chervokas.

The Audiophile Network: My enthusiasm for this group continues after three years. The general tenor of exchange here is intense, informed, and still friendly. The range of interests and temperaments on TAN is wide. In my experience, few requests go unanswerd, and few statements go unchallenged. We engage in stimulated debate. Mr. Chervokas says that new members might be "put off" by the seeming clubbiness, but, in fact, new members are welcomed, often ceremonially. It is these newbies (although we don't use that term on TAN) who stimulate reexamination of the issues that we care about. If a TANner from one part of the country visits another part, a TAN meeting with discussions, demonstrations, food, and drink is often held by the locals. At the recent Stereophile Show in Los Angeles, I met many West Coast TANners in person for the first time, and the sense of camaraderie was palpable. One can judge from Doug Schneider's photos of our "scotch-and-cigars" evening that we are, indeed, a mixed bunch, but the common interests and appreciations continue to bind us online and in person.

One should emphasize, also, that the use of an offline mail reader brings the cost of dialing in to TAN, even from the other coast, down to pennies. I am rarely connected for more than a minute to upload my posts and download those I wish to read.

**rec.audio.tech:** This group suffers from many of the same ailments of other rec.audio groups but steps further into science and engineering. The discussions here are, appropriately, more technical than elsewhere, and it is frequented by knowledgeable people such as Dick Pierce, Chris Hicks, Gabe Weiner, and others, from whom I have learned quite a bit. I have also exchanged schematics, technical literature, and even parts with people I have contacted via this group.

**sci.electronics:** Here's where you get to ask questions about anything related to electronics and where you can reasonably expect a cornucopia of information in return. There are trivial inquiries ("What's the 800 number for DigitKey?"), but you can also learn from the experts ("I built the following circuit, but it is unstable under conditions A, B, C...Can you help me?").

KALMAN RUBINSON New York, NY

**Caught on the Web?**

Editor: I am an audiophile enthusiast looking for Stereophile on the World Wide Web. Where are you? You guys have not secured the domain name stereophile.com with the Internic. Does Stereophile plan to set the trend in audio publishing or follow?

SCOTT GOOD goods@psi.com


**Web Sites...**

Editor: I was not able to contact a single one of the Web sites listed in the July Stereophile; they all said the server or the files requested were unknown. Are you sure these addresses are correct? Everything else I tried tonight worked!

STEPHEN KRUFT skruft@exit109.com

**No Found**

Editor: In your July issue you gave some information on High End in Cyberspace. Great article, but the mailing list (request@maths.ex.ac.uk) comes back not found. Is this the correct address for the mailing list? BRYAN STEWART bstewart@nando.net

A typesetting gremlin arranged for the tilde symbol (~) to be omitted from some of the addresses. Here are the correct versions:

- Audio Page (http://bundy.hibo.no:80/~rdp/audio.html)
- The Speaker Building Page (http://bundy.hibo.no:80/~rdp/Speaker)
- A "Do-It-Yourself" Speaker Project (http://www.qnx.com/~danh)
- HiFi Pages (http://hydra/unik.no:80/%7Erubert/hifi)

There seems to be a primary address for the HiFi Pages that is different from the one that comes up when you actually html to the site. That address is http://www.unik.no:80/~robert/hifi.

Other sites that have appeared since the article was written are:

- Mark Levinson (http://www.moth-er.com:80/~audiofz/levinson.htm)
- Goldmund (http://nexus.thenet.ch:80/~goldmund)
- Chesky Records (http://world-web.net:80/wwmarket/CHESKY/ICHES KYHTM)
- Mike's Favorite Links (http://emporium.turnpike.net/S/sumo/mike- favs.htm)
- Sumo (http://emporium.turn-pike.net/S/sumo/audio.htm)

—Jason Chervokas

**Back Issues?**

Editor: I am getting ready to plunk down $3000-$6000 on a stereo system, and I would very much appreciate a copy of the "Recommended Components" list. I figured that was a simple matter of going to our local library, but no such luck! None of the libraries in our Harris County system carries Stereophile! Thanks very much; I'm looking forward to being a long-term subscriber to your fine magazine.

BILL ROTHWELL Katy, TX
wrp@msn.com

I'll put a copy of our April '95 issue in the mail to you. Please send Stereophile a check for $7 for the magazine plus $3 S&H when you receive it.

—JA

**No Thank You!**

Editor: Thanks for your reply. I appreciate
your intent on sending me a copy of the April issue. However, it is no longer needed, [as] I was able to find a compiled list of Stereophile's "Recommended Components" on the Internet... Thanks for your efforts, and sorry if you misunderstood my original request.

Bill Rothwell
Katy, TX
wpr@msn.com

Too late to get the issue back. Please give it to a friend who doesn't read Stereophile, and we'll call it square. But please read this issue's "As We See It" on p.3.

—JA

DOWN WITH FLAT?
Editor:
I noticed an interesting pattern in several of the reviews in the June issue of Stereophile: Products whose measured responses were remarkably clean, flat, and free of distortion were described as having a downward-tilted tonal balance—pleasantly sweet and musical but inaccurate. I'm referring to Jack English's Joseph Audio RM20ti Follow-Up, Robert Harley's Sumo CD transport/DAC review, and J. Gordon Holt's Meridian DSP6000 speaker Follow-Up (part of his Meridian Digital Theatre examination) [all in Vol. 18 No.6]. This lack of correlation between the reviewers' conclusions of treble rolloff and Stereophile's measurements was commented upon by Michael Custer of Sumo in his Manufacturer's Comment.

I know what you're thinking: That's exactly why we publish both subjective evaluations and test-bench measurements; measurements don't tell the whole story. Agreed.

But if frequency response is not the issue here, we must ask what can cause some speakers and electronics to sound less bright than others. A few things pop readily to mind: lack of odd-order harmonics; freedom from narrow-band resonances, whether mechanical or electrical; and, in the case of speakers, a smoothly rolled-off rather than peaky off-axis response. (The issue of "correct" tweeter dispersion is a thorny one, as room treatment and speaker placement will determine whether a wide-dispersion tweeter sounds bright or not at the listening position. We shouldn't blame a speaker for being "colored" if changes in room treatment remove the coloration.)

Of course, dozens of other factors play roles, but the problem for a reviewer is that all of the things listed above make a system not merely sweet-er and more musical but also, counter-intuitively, more accurate. Reviewers as experienced and trustworthy as English, Harley, and Holt are surely aware of this conundrum, and their subjective evaluations are more than likely spot-on; but in light of measurements that directly contradict the inference drawn from their listening experiences, and in light of alternate explanations that would suggest that these products are quite accurate in the treble, I would tend to doubt their conclusions.

Further, I object to JGH once again trotting out his amateur recordings as proof of his special insight into accuracy. The "Audio Uncertainty Principle" holds that one can never know with absolute certainty what a recording or a microphone feed really sounds like. JGH's vast experience in these matters notwithstanding, even the recording engineer himself can't know. Therefore, one can never assume that a recording is an accurate portrayal of the live event. Perhaps if JGH had the Meridian speakers on hand during the recording sessions, he might have moved the microphones a little closer to the performers in order to capture more bite and detail (the detail that he heard when standing in front of the orchestra at his own "ideal" seating location). The fact is, he chose the microphones and their positions based on the inevitably flawed monitoring equipment he preferred at the time. If the Meridian stuff had been his reference, I suspect that speakers he now finds accurate might seem mercilessly bright.

I have no doubt that the components reviewed by English, Harley, and Holt sounded sweet, musical, and tilted down in the treble—in spite of their flat frequency responses. I'll also allow that each of your reviewers has a good deal more experience than I in evaluating hi-fi systems—that's why I read and respect Stereophile. However, as the test measurements showed almost ideal frequency and distortion plots, I need further convincing that your reviewers came to the right conclusions about supposed high-frequency inaccuracies.

Mark M. Block
The Audiophile Voice
72733.1467@compuserve.com

POLITICS
Editor:
Yep! Here they come, letters complaining about John Atkinson's "Politics, Information, & Tweaks" column in July. [Vol.18 No.7]

As you said, we don't buy Stereophile to be lectured on political matters. Do not assume that you (or I) represent an opinion on these matters that's going to sit well with the majority of your readers—politics is the last thing they want to hear about in a publication of this type. So somehow forget the lecturing on this matter; you're dabbling with egos here, in a way not fully understood. Why insert a grating, irritating element into an otherwise semipeaceful scene? Back to the music...please!

So, having said that, I'm going to give my opinion on the PBS issue. In doing so, I will upset the portion of readers you haven't.

There are a lot of interesting shows on PBS. I watch them quite often and contribute. However, I am of the opinion that, since we live in a capitalistic system, if one cannot survive, then to the trash heap. Harsh, maybe even crude, but that is the way our system works.

It is patently unfair to outstanding channels such as The Learning Channel and Discovery to have PBS on another channel with taxpayers' support! This smacks of a mild form of "creeping socialism."

My recommendation is that we get our "taxes" out of PBS and put it on an even keel with the many other great channels that abound out there. If it survives, great. If not—so be it. Many of the great shows on PBS could easily move to the aforementioned Discovery Channel, The Learning Channel, or the upcoming History Channel. Other channels with these thought-provoking shows are in the works...PBS is no longer alone. If one views all the variety on a DSS Satellite System, the once unique qualities of PBS are diminished greatly. "The times, they are a-changin'" never applied more than now.

No, I don't think that any "sacred cows" will survive this Congress. It's time we had a fiscal review across the board. The drift and float of the past 40 years is history—now we have to get this "monster debt" under control before it diminishes all of our lifestyles, not to mention our children's.

No, I don't think PBS will immediately fold up and go away. With good talent and management, PBS might become one of the premier channels of provocative thought, all within this dyna-mo that is our Capitalistic System. Now, let's all get back to this fascinating hobby of ours—did I tell you about this tweak?
SUBSIDIES
Editor:
Why should a kid flipping burgers for minimum wage trying to agglomerate enough revenue to take his sweetheart out to an Hootie and the Blowfish concert on Friday night be bullyragged into contributing to my Mass in B-Minor on Sunday-morning public radio?

JEFF CANAVAN
Branford, CT
71754.3504@compuserve.com

SOAPBOXES
Editor:
Your “As We See It” on the Corporation for Public Broadcasting [July ’95, p.3] was silly. I doubt that you have spent much time reading Adam Smith; even a cursory look at his philosophy in a textbook would indicate that he is hardly an appropriate name to drop when making a case for a government-sponsored, tax-supported bureaucracy such as CPB.

To say that the CPB “makes sure that all voices could and would be heard” makes me wonder if you watch and listen to the same broadcasts as the rest of us. Clearly, this is not what they do.

And why call people who disagree with you names like “so-called conservatives” or position them as threats to the First Amendment? Did you overdose on politically correct pills that day, or what? To say that cutting tax dollars to the CPB is “the beginning of a process that might one day prevent this magazine or any other being able to say what needs to be said” is inane and bombastic.

You are correct about one thing, however: I don’t read your magazine to get a political lecture. Hey, JA—you are a hi-fi magazine. Stick to what you know. Leave that sophomoric soapbox shit outside the pages of Stereophile.

JACK BRADY
San Francisco, CA

BOUNDARIES
Editor:
By delving into the world of political discussion, you have crossed a boundary that, if not currently defined by your product, should be. You ask me to accept the premise that, because you are a magazine, I must put up with whatever ideas you wish to publish or I am responsible for narrowing the scope of the First Amendment of our Constitution as it pertains to the open flow of information. I find that an unacceptable viewpoint on your part.

You have a Constitutional right to publish and disseminate whatever information and ideas you choose. I have a Constitutional right to decide which forums I choose to receive my information from. I am sure there is agreement that you, or anyone, lack the right to require me to purchase a particular publication. So while you attempt to minimize any complaints on your political editorials by rationalizing a freedom to disseminate any information, you do so by effectively ignoring my rights under the First Amendment.

I subscribe to and listen to and view a variety of politically oriented products. I choose to purchase your product for an entirely different need. If you want to represent your product as a political publication, then do so, and don’t be surprised if I choose to no longer purchase your product because I don’t need another subscription to a political/current-affairs publication.

As to the Corporation for Public Broadcasting itself, my children do not depend on television for anything other than entertainment. The mores and values that they receive come from my wife and me. Indeed, the CPB is one of the last places I would consider...
enthrusting my children's well-being, and I shudder to think that you feel comfortable elevating television to that level of trust in our children's development. Yes, television is a central fixture in family life. The debate, however, is about who is responsible for raising our children, and television can never be given that responsibility.

My priorities for my family do not include the CPB. If a family chooses to incorporate the CPB into their lives, then they can donate money, as can you, to keep it on the air. *Nightline, This Week With David Brinkley*, and even Rush Limbaugh are free-market exercises in nonviolent, informational programming. So are the Discovery Channel, A&E, C-Span, etc. What makes the CPB superior to these examples of freemarket programming? If you want my taxes to go to the CPB, then I feel it is only fair that taxes cover my purchases of laserdiscs, CD-ROMs, and, yes, *Stereophile* magazine. David M. Bugg

E. Wenatchee, WA

**CHOICES**

Editor:

I've been a *Stereophile* reader for over five years now, and I look forward to the magazine's arrival every month. However, it is your first (as far as I can remember) "political" editorial that has stimulated me to write my first letter to the editor. I'm referring, of course, to your CPB editorial in the July issue.

As even a "part-time libertarian," John, you should know that the government guarantee of a level playing field ought to mean that the government should protect you from criminal interference with your noncriminal activities. The idea that government should provide a level playing field by forcibly taking the resources of some citizens and giving them to others merely to "provide equal opportunity" is completely alien to any kind of libertarian philosophy. Such an idea was also alien to our country's founders. The First Amendment does not guarantee you the right to publish the truth. It guarantees you the right to not be interfered with should you decide to use your resources, legitimately acquired through the marketplace, to do so.

The problem, of course, is where PBS/CPB get their resources. In his letter in the July issue, Mr. Donald Bisbee of Columbus, Ohio makes the point that "A program that through taxes costs less than a dollar a year, yet by private donation costs us +$50 a year." And there's the rub. Public support for that program saves Mr. Bisbee $49 a year, but that $49 is coming from the pockets of people who don't give a fig for PBS/CPB. I watch public television. I listen to public radio when I can't find an independent classical station. I'd miss them both if they were gone. But if public broadcasting can only survive through involuntary contributions in the form of tax dollars, it deserves to die.

Your footnote states that, of the CPB's total budget of about $1 billion, only $319 million came from tax money. Surely it would not be difficult for those who are convinced of the need for public broadcasting to dig deeper and up the contributions by 50%. Then they wouldn't have to carry around the guilt of stealing 98% (by Mr. Bisbee's reckoning) of that $319 million from their fellow citizens! Or (horror!) the PBS stations could sell advertising!! No matter how much I may hate some of the commercials on my current favorite classical station, my irritation is always

---

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ranean, the satisfaction that that station is not sticking its nose in the public trough. If public broadcasting got off the public dole, I'd probably start contributing again myself.

Keep up the good work, but let's let the free choices of free people determine what is on the air--just as the free choices of free people determine whether Stereophile keeps on publishing.

John C. Rossmann
Coral Springs
john@synergys.com

Communications
Editor: Thank you, Mr. Atkinson, for "Politics, Information, & Tweaks" [July, p.3]. And thank you, Donald Bisbee, for writing the first letter to Stereophile concerning the Corporation for Public Broadcasting (CPB) cuts [July, p.13].

I feel it would be good to say what public- and listener-sponsored broadcasting has meant to me. Like most of us, I listened to commercial radio and watched TV as a kid. All audio circuits had vacuum tubes at that time. The FM band was still very secondary to AM. I somehow ended up with a table radio in my bedroom that included FM. I spent my late-night hours listening to this fascinating-sounding new broadcast band.

Since FM was a struggling medium at that time, even the commercial broadcasters were practicing decent audio. As we progressed through the '60s, some very interesting things happened on the FM dial. But as FM became the dominant band, the quality of programming and the audio both went down the tubes. I found myself more and more dependent on noncommercial broadcasts for things that were intellectually, musically, and audibly pleasing.

Jumping to the present, I quit the nasty-sounding TV in 1981 and have found myself not listening to any corporate radio--or anything that sounds like it. I live in an area where I can walk to live musical events--daily. I keep up with the music and events of the world and my neighborhood via CPB-funded, listener-sponsored, and micropowered radio. As the first two are coming under threat, I see myself and others more dependent on the last.

For more info on the micropower approach, including inexpensive broadcast hardware kits, contact: Free Communications Coalition, 1442-A Walnut St., Berkeley, CA 94709. Voice mail: (510) 464-3041. E-mail: frbsdp@crl.com.

I know the readers of Stereophile have the equipment and collections of pre-recorded materials to keep their communities on their ears for countless hours. Let's do all we can to uphold the second condition of Adam Smith's free-market philosophy: a "total and free dissemination of all relevant information."

Glenn H. Martin
San Francisco, CA
74110.1712@compuserve.com

Politics, Schmopolitics!!!
Editor: Who cares if a few of your readers write to complain that your support for PBS is politics and cancel their subscriptions? They will continue to buy Stereophile any way, anonymously, at the newsstand. And what is political about Stereophile, an equipment and music magazine, supporting the only broadcasting system to bring you great music in great sound--jazz, pop, symphony, opera? Is someone out there just waiting to bring us better music and better sound in our homes and cars and Walkmans? And if so, why have they not done it yet?

Is instrumental music all that political? Throughout our century, someone has found an A-sharp more political than a B-flat, Wagner to be a Nazi, and Shostakovich a Communist. I remember a McCarthy-era Civics text that pictured a Columbia LP with American musicians performing a Prokofiev String Quartet (composed in New York City) in an American hall with the caption reading that Americans could even listen to Communist music if they wanted to.

Do we really need a "conservative" cockatrice of a Congress to give its deadly glance to our only source of decent, shouting-commercial--free programming, all for some politically expedient hysteria and a pretense of cutting the budget and our taxes? The Peace Green Freshmen of this Congress seem only to have read the Nobel Prize--winning celebrity Milton Friedman, who claims that, "if the end doesn't justify the means, what does?"

Wanting to hear music and having music equipment is not political, period.

Donald Bisbee
Columbus, OH

Off-Center?
Editor: The July Stereophile issue had as its "Recording of the Month" Medeski Martin & Wood's Friday afternoon in the universe (Gramavision GCD 79503).

Thanks for attention to such off-center releases. This note is mainly to strongly recommend Lunar Crush, the 1994 Gramavision release of Medeski Martin with

David Ficuzinski (GCD 79498). Given your enthusiasm for Friday afternoon..., it's likely you've already found it.

Keith Frezon
Santa Barbara, CA

Blooming
Editor: The Harmony Mundi recording of Mahler's Symphony 1 by James Judd and the Florida Philharmonic is all that Kevin Conklin in his glowing review [September 1994, p.161] and John Atkinson, in picking it as a "Record To Die For" [February 1995, p.55], said it was: a gem in both performance and sound. I also found Stephen Francis Vasta's comment on Judd's "exceptionally cogent finale" [January 1995, p.189] right on the mark--it's the most exciting Mahler 1 finale I've heard--though I'm not qualified to pass judgment on his technical reservations on certain of Judd's tempo adjustments "elsewhere" in the performance.

What pleases me most of all in this recording, however, is to hear the long-lost "Blumine" movement, not heard for 73 years between 1894 and 1967, finally given a performance on CD that does it justice--a point on which all three reviewers are in agreement.

I'd like to call attention to an error in the reviews concerning the history of this movement. Mahler did not excise it exactly "early on" (Conklin) and definitely not prior to his second performance of the symphony (Vasta, p.183). Following his ill-received first performance in Budapest on November 20, 1889, Mahler conducted it in Hamburg on October 27, 1893 and again in Weimar on June 29, 1894--the score somewhat revised but with "Blumine" intact as the second movement. The first performance as a four-movement symphony without "Blumine" (and with further revisions) was in Berlin on March 16, 1896, Mahler again conducting.4 Thus, "Blumine" was not dropped in public performance until well over six years after its debut. By the time the work was finally published with yet more revisions in 1899, "Blumine" was only a memory of the select few who had attended one or more of the first three performances.

I do take some issue with KC's comment that placing "Blumine" as the last track of the CD is "the only correct arrangement" in that "the casual listener will hear in sequence the four-move-

ment work the composer intended." Mahler's original intent, from presumably when he started composing it in 1884 until 1894-96, was a five-move-ment work with "Blumine" in second position. The casual listener who does-n't program the CD player will hear "Blumine" at the end, which Mahler never intended. A good case can be made against sandwiching it with the later revisions of the other four movements, but this I'll cheerfully do until a better version with comparably good sound and performances comes along, which may take a while. The correct version incor-porating "Blumine" would be one using Mahler's 1893 orchestration throughout (to a casual listener differing only in minor ways). The only such re-cording produced to date is a fine 1970 performance on an out-of-print LP by Wyn Morris/New Philharmonia on the PRT label—not easy to find. So far I've waited in vain for its reissue on CD, my treasured LP being flawed. Perhaps Judd or some other distinguished Mahlerian will consider recording that version anew.

In his biography of Mahler, Michael Kennedy expresses his opinion that the composer's abandonment of "Blumine," for whatever reason, seems to him to be "a mistake both for itself—it is beau-tiful—and for its place in the structure" (p.116), and cites Mahler's quoting from it in the finale. I agree. The musical cross-reference is, of course, pointless if its source is not there in the first place. "Blumine"'s lyricism also provides a needed balance to the movements flan-king it. In any case, this great symphony will never again be complete for me without "Blumine" as an integral part of it as the second of five movements. To me, none of the handful of other recordings that one or another of Stereophile's reviewers consider as some-what better performed than Judd's fills the bill, since they do not (and prior to 1967, when the 1893 score came to light, could not) include "Blumine" at all.

Anyway, a thousand thanks to James Judd for including it with a top perfor-mance of the symphony—and to Har-monia Mundi for a top recording, be-side which the reservations noted are pale nitpicks by comparison.

LEE G. MADLAND
Anchorage, AK

AGHAST!

Editor:
I was aghast at Richard Lehnert's horri-bly stupid review of Bob Dylan's MTV Unplugged CD in July [Vol.18 No.7, p.207]. I fear this is a case of "reviewer who is more audiophile than music-lover." Apparently Mr. Lehnert thinks that Dylan is so stupid he just don't know how to rock. And the band is "polite"? Bob will be surprised to hear this—after all, he is known for being careless when he records and performs. I guess Bob Dylan just doesn't know how to pick bands or sidemen, like Robbie Robertson and Michael Bloomfield.

Sure, the old Dylan stuff is great—does Mr. Lehnert think he would do it the same way? Is he not aware of the ever-changing nature of great blues and jazz interpreters? Get an ear! The tempos and emphases are different, sure, but too bad Mr. Lehnert is so used to what he is familiar with that a brilliant alternate version becomes a "tenth-gener-a tion fax."

Obviously what bothers Mr. Lehnert about this record is exactly the thing that makes it great. Too bad he will be deprived of the pleasure of great blues because his mind is paralyzed. Get out of the way if you can't lend your hand, for the times, they are a-changin'.

JOE DEL PRIORE
Stockton, NJ
Delpriorej@dbisna.com

I neither expect nor want Bob Dylan (or any-one) to continue to perform his most important songs in carbon copies of their original versions. I simply want these updates to be, in their own new and unique ways, as at least as good as those earlier versions. My disappointment with MTV Unplugged was that Dylan's performances sound, for the most part, lack-luster, phone-in, and gutless. I don't mind change at all; it's decline that disappoints.

Nor is Dylan's choice of sidefolk invariably inspired. Remember Self Portrait? Dylan? The perfor-matory-at-best horn and rhythm sec-tions of Street Legal? The appalling empti-ness of Live at Budokan? Mr. del Priore describes MTV Unplugged as "great and "brilliant," but declines to say how or why that might be. I'd be interested in his explanations.

No, Bob Dylan is not a stupid man; but he does sound tired and resigned on this al-bum, and in his statements to the press as quoted in my review. If Dylan is "surprised" to hear all of this, all to the good—it means he still might have something to learn, even from such a "horribly stupid" reviewer as I. —RL

TRANSFER OF THE CENTURY?

Editor:
My heart skipped a beat today while scanning the July Stereophile. Michael Fre-mer, arguably the best music reviewer in high-end audio, is there, on p.45, in black and white!

I have been a reader of MF's record reviews in The Absolute Sound for a while. His is a rare breed, indeed: a terrific music reviewer with truly golden ears. (When MF recommends a "buy," I respond "how many copies"?) I am glad Stereophile has not let Mr. Fremer's, uh, provocative writing in TAS in the past get in the way of his becoming a Ste-reophile contributor. It is the readers who really benefit here. His debut at Stere-oophile shows you have been true to your words: the readers come first.

Perhaps MF's only weakness is his anti-Republican way. But that's okay. In time, he too will see the light. Congratulations on the transfer of the century

CAN Q. PHAN, MD
Toirrance, CA
can.quang.phan@sanet.com

HEARTFELT!

Editor:
I have just read with the greatest plea-sure Michael Fremer's articulate and well-argued article concerning analog in the July Stereophile. I just wish that I had read the thing before I left Chicago. I would have shaken his hand. What he wrote was one of the most lucid, heart-felt observations I have ever had the good fortune to read. I would also like to thank MF for the coverage that we received on the '95 Winter CES in The Tracking Angle.

It will be interesting to see just how many people will be using turntables to demonstrate their products at the Ramada show in London this year. The vociferous and material actions of peo-ple who refuse to accept what big com-panies try to have us believe appears to be succeeding.

CRAIG MILNES
Wilson Benesch, Sheffield, England

GIDDY!

Editor:
It's noon, and I can hardly see to type this letter. My fingers are numb. My brain is dead. I am elated, almost giddy, but not from the lack of sleep or strong drink. True, I've been awake for 30 hours straight. I had to stay awake. It's all your fault. I just finished Michael Fre-mer's compelling installment of "Analog Corner" in the July Stereophile.

To say it is the best "apologia" for analog would be a gross disservice. Un-like many articles that, once read, are mused upon briefly (then on to the next), Mr. Fremer's article moved me to action. Led by thoughts truly provoked,
Rotel Report

Rotel’s remote controlled RSP960AX. “I was really surprised when I popped the cover. How in the world can Rotel sell this product for only $599?”

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We’re looking for feedback—Yours.

We work hard to eliminate feedback in our circuit designs. But we’re hoping for a lot of it in this column.

So if you have a question or a suggestion, share it with us by writing to Rotel Feedback at the address below.

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I laid down Stereophile and ran down to the basement to unearth analog treasures long forgotten. Three hours later, heart pounding with anticipation, I began to set up to listen to analog. CD player set aside, I began to patch in my faithful Harman/Kardon Citation Eleven preamp. Next came my 1987-vintage Rega Planar III with the Linn K9 cartridge I got for it in 1993. First up: 12" 45rpm Tefelimus on Reference Recordings.

Rapture! Mr. Fremer had understated the musicality of LPs, especially when compared to CDs. (Sorry, Reference Recordings—your CD issue of the same album is, well, lifeless, sterile, dead). Many more albums followed by Crystal Clear, Mobile Fidelity, Telarc, and others. Man, compare the LP of Telarc’s recording of Malcolm Frager playing Chopin on a huge Bösendorfer—alive and breathing right in my listening room. Then the CD, which yielded shadows of Malcolm Frager playing a blurrily focused big piano that was making noise at one end of my room.

Back to the basement. More treasure: my Nakamichi 610 preamp (remember those, with the mixer-like design and the wedge shape to match the 600 cassette deck?) and a Dual 1249 (less the stacking spindle, I assure you) with an Ortofon VMS-30. Still rapturous. True, alive, more musical, more...just more than the same CD.

Back to the basement. Still more treasure: my tweaked-to-the-max Dynaco PAT-5 and a genuine ‘60s-vintage AR turntable complete with Shure M-44! Now is when I got my real surprise. The AR/Shure still had that “something” CDs lack! Amazing! Yes! Thrilled? Yes!

So then I got to mixing and matching preamps and turntables, and although I found combinations I liked better than others, I liked every combination. Twelve hours had elapsed, and I couldn’t get enough. I hadn’t enjoyed stereo this much since my first setup, which was the Dual 1249 with a Shure M-95ED, Pioneer 636 receiver, and a pair of used JBL 4311 monitors (okay, okay, stop laughing—we all start out somewhere!)

Well, this really got me to thinking about analog sound, so off to the basement again. This time my faithful old Revox A77 and some tapes I made live using AKG D-190E mikes (an overlooked bargain—these guys can be made to sound like condensers if loaded right) in an ORTF-like arrangement. Comparison of these recordings to “better” recordings made on a Foster DAT using AKG C-461 condensers in a similar ORTF-like setup was shocking. True, the A77 has hiss, but it has a musicality, openness, and ambience I’ve never gotten from DAT. Well, I’m on a roll now. Comparison of dbx-encoded tapes made on my newer Revox B77 had no hiss, and the same “something” the DAT lacked.

Now for the real test. I didn’t care about the fatigue—I had to know. There it was, consuming a corner of the room, my Scully 284B-4 four-track 15/30ips machine that eats ½” analog tape like an ant eater at a spaghetti dinner. I threaded up a tape, switched the Dolby-A noise-reduction on, and waited. Would it have an edge over “better” recordings made on an Alexis ADAT? Guess. Wrong! The ADAT sounded thin, with a tentative, sterile, can’t-put-the-finger-on-it—but-it’s-not-quite-there feel to the tracks. Strange—your mind tells you the noiseless, full-bandwidth, low-distortion tracks of the ADAT are “perfect,” but your soul says there’s no music there. That’s okay, you’ll fix it in the mix, you tell yourself. But you never do. Oh, but that old analog Scully! A little hiss (surprisingly little), some bloom to the bass, a little bit less brightness on tracks one and four. But there’s music there! Just mix, add pan, and living, breathing musicians flow forth into my room, transported there through my speakers. Let Scotty beam someone else up, I have analog to transport me!

I have Stereophile to thank for reawakening both my love of stereo and my understanding of just how much we have lost by rushing headlong into a highly limited digital format, namely compact discs. I’m selling the ADAT and the R-DAT, then using the money to refurbish the Scully and the two Revoxes and upgrade the turntable. Mr. Fremer, thank you! I’m convinced. I’m getting back into vinyl. Okay, I’ll still listen to CDs, but never again exclusively. (By the way, shouldn’t “Analog Corner” be placed on p.335? Oh well, p.45 is okay, too.)

Now for the real point of the letter: I need help now. I need to know some good tweaks and upgrades for my Rega Planar III to keep me happy until I can step up to a yet better turntable, cartridge, and preamp combination. Again, thank you, Michael Fremer and Stereophile.

KERMIT GRAY Raytown, MO

NO HOPE FOR NEW VINYL?

Editor: I read all of Michael Fremer’s inaugur-
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Jeff Chan
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SERIOUS MISINFORMATION?
Editor:
I am writing in response to Michael Fremer's "Analog Corner." While I enjoy listening to vinyl and appreciate its merits, I believe there is some serious misinformation in this article.

The main offenders are the assertions with respect to resolution. First of all, Mr. Fremer does not specify whether he refers to dynamic or time resolution. Either way, the statement that an analog—and, more specifically, a phonograph—system has "infinite resolution" or even "effectively infinite resolution" is emphatically wrong.

Dynamic resolution is dependent on the noise floor, which is most definitely nonzero in the particular analog system in question. It is often higher than the CD (16-bit, 44.1kHz-sampling) digital system; thus, the CD usually has more dynamic resolution.

Time resolution, as shown by Fourier, is dependent on the bandwidth of the system. There is no question that, on the low end of the spectrum, digital has more bandwidth, as its response extends to DC, or 0Hz. The phonograph, on the other hand, is limited in the cartridge exists a second-order high-pass filter caused by the mass and compliance of the components therein (the stylus suspension, etc.). This rolloff usually occurs around 15Hz, if I am not mistaken.

The upper-frequency limit of this system, through RIAA equalization and the electromechanical properties of the system, is often less than 20kHz, while that of a properly designed and implemented CD system can be above 20kHz.

Thus, we see that the vast majority of phono systems cannot have greater resolution (of any kind) than a properly designed CD system—much less infinite resolution, which requires zero noise and infinite bandwidth. Though I am a vinyl enthusiast, I suggest that Mr. Fremer get his basic facts straight before making such assertions.

John Busenitz
West Lafayette
Busenitz@ecn.purdue.edu

The question of the LP's resolution is somewhat vague, as, like asking where the atmosphere ends and space begins, it all depends on your initial assumptions. Though the LP's noise floor lies around the -50dB level with respect to a standard 30n/s recorded velocity, for example, audible signals can be heard well below the noise. The LP's floor isn't an absolute limit, as it is in an undithered digital system. But theoretical questions aside, please note that I considered MP3's use of the word "infinite" to be justifiable hyperbole given that LPs do sound better than their CD equivalents. In listening comparisons I have performed, for example, both formal and informal, trained and untrained listeners have expressed a preference for the "accessible" sound of LP compared with the "less involving" sound of CD.

Such admittedly anecdotal evidence suggests that, unless the spurious and distortions added to the music by LP playback are things that human beings inherently prefer—as has been hypothesized by Bob Ludwig—there are other factors to be considered other than the theoretical product of system bandwidth and signal/noise ratio. I suspect that the clear subjective superiority of 20-bit over 16-bit digital, despite any measurable difference being below the -96dBFS level indicates that the subjective resolution of CD-standard digital is being masked, perhaps, by the highish low-level distortion and jitter-related spurious.

CELLO PAEAN?
Editor:
I read with amusement Lewis Lipnick's paean to the Cello system, writing "For me, it's the end of the road." (Vol.18 No.7, pp.91–96) This reminded me very much of a previous ode to the B&W Matrix 800, in which our critic wrote: "Shortcomings: There are none." (Vol.14 No.6, pp.151–163.) Perhaps the margin between reality and appearance can be thinned, but here we have a complete loss.

As another (albeit amateur) musician, let me note that Mr. Lipnick's mandatory references to his profession yield little credibility over and above the substance of his reviews. Sitting in the orchestra with "...the sheer impact of a full brass section playing fortissimo 5' behind me..." (July, p.91) has little to do with listening to a performance as a member of an audience. In fact, such exposure could permanently alter one's hearing and one's preferred listening balance for the worse.

Indeed, I seem to remember learning that double-reed players do tend to go a bit over the deep end on occasion. It has something to do with sympathetic vibrations of the sinuses entrapping the brain pan and blowing out the limbic system. Perhaps a couple of tuning dots on your forehead, Mr. Lipnick?

Thanks for the journal. And, seriously, thanks for the review. This is how we see the future.

Douglas W. Axelrod, MD, PhD.
Milford, OH

MORE COMPARISONS
Editor:
I find the compare-and-contrast-component style that most Stereophile writers are using to be very helpful. It's much easier for readers to "hear" the components that way, in my opinion.

In contrast, I have reread Lewis Lipnick's July review of the Cello system (p.91), yet I am not sure I can imagine what that system sounds like (tonal balance, imaging, soundstage, etc.). It would have been so interesting if LL had compared the Cello speakers with the B&W 800—"Shortcomings: there were none." Please ask your writers to do more comparison, as you more than yourself."

Can Q. Phan, MD
Torrance, CA
Can.quang.phan@canet.com

MORE QUESTIONS THAN ANSWERS
Editor:
I have great respect for Lewis Lipnick's opinions (probably because I agree with him most of the time). In fact, my system (Krell 300S-driven B&W 800s) is very similar to his previous system.

Although I found his Cello review intriguing, it created more questions than it answered. As most of us out here in Stereoland cannot afford to drop $100,000 to buy the system he describes, it would be more feasible to purchase one piece at a time. Therefore, how do the individual pieces of Cello sound in an otherwise non-Cello system? How do the individual pieces of Cello compare to individual pieces of other brands? Also, what is the sonic difference between using the Palette IV vs the Palette IV/Encore as preamps? How would the Cello system sound substituting the B&W 800s? Why do the Stradivari speakers move a lot more air than the 800s, seeing as how both have very similar overall driver surface area?

I look forward to many Follow-Ups to Mr. Lipnick's review.

Richard D. Diamond, DDS
San Francisco, CA

FINALLY!
Editor:
Finally. The entire Cello System was reviewed by an accomplished musician. In my distant past I was a pianist, and in the recent past (five years) I have
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owned and listened to a complete Cello System (including Grand Masters and Cello Suite). A few comments:

- LL is absolutely correct that, as is true with most great products or services, this is a result of the vision of a focused, passionate individual: Mark Levinson.
- Once the system is yours, the only trade-ins are upgrades to Cello products.
- The system will play superbly in any environment; mine has been auditioned in three locations.
- The system is as close to reality as I have ever heard—get goosebumps every time I listen.
- Mark Levinson is available and will talk in a non-hurried fashion on any audio issue.
- Support from Cello (I am particularly thinking of Nic Lucci) is unequivocal and complete.
- Their focus is on the music—not on selling equipment.

In a world of voice-mail, nameless bureaucrats, lack of accountability, and passionless human beings, what a treat to have something like this alive and well.

Joel W. Konner, Ph.D.
Santa Monica, CA

Great Stuff

Editor:
In days past I found my taste in music listening was, well, bright and boomy. Turn the treble and bass all the way up and crank the volume, speakers on the floor against the wall, black light and Hendrix posters aglow...Was there any other way to listen to Rock’n’Roll?

Listen in the kitchen, listen in the bedroom under my bed (mom said I was a strange child in between screaming to me to turn it down...). But now, now I find my speakers in the middle of my living room. Yes, I do live alone! Also, it really bugs me if I find myself not sitting in that magical sweet spot. This all started when I had the chance to listen to a system that cost as much as some two-bedroom homes up here! Wow, Wow, Wow! My ears were doing tricks on me. What were those strange-looking speakers called Quads? No sound coming directly out of them, sound was where it wasn't supposed to be, everywhere else.

The man just smiled as he watched me sit there in his leather couch with a dumbfounded look on my face. Now I find that I spend time trying to "tweak" the most out of my meager system. I am now a man with hi-fi taste and mid-fi pockets.

Yes, the point of this letter. I have been reading and thoroughly enjoying Stereophile for about 3-4 years. I recently finished Lewis Lipnick's article on the Cello system. Moments later, I found myself in my car planning out my trip to New York to listen to this most incredibly described sound—great stuff!

But I live in Maine and have work in the morning!

But, I do have vacation in July, and New York it will be... Don McCoy
Bangor, ME

Can't Say Anything Nice?

Editor:
My mama always told me: "If you can't say somethin' nice about someone...just go ahead and make fun of 'em." Well, the way I see it, Lewis Lipnick is just plain asking for it. I have always found his reviews to be the most unintentionally hilarious events in Stereophile. He's actually much funnier than Corey ever was, and Corey was very, very funny!

First, of course, was his infamous June '91 review of the "flawless" B&W 800 loudspeaker. Now, I really like B&W products, but we all know that the flawless loudspeaker exists only in the fertile imagination of its designer. The best part of that whole mess, however, was the picture of Lew standing in his listening room [Vol.14 No.6, p.156] with the B&W behemoths nearly hitting the ceiling, the side walls, and Lew simultaneously. Putting speakers the size of refrigerators in a room no larger than a good-sized walk-in closet seemed, at best, slightly goofy. But I gave Lew the benefit of the doubt because, hell, he's a professional musician, so he must know what he's doing, right?

I didn't think Lew could top that little episode, but was I ever selling his sense of humor short. Now comes his July '95 review of the Cello Music and Film System. Well, Lew has simply outdone himself. First, he has set a record that even he may be unable to break by telling us in the very first sentence of the review that he is, without a doubt, a professional musician. Until his byline reads "Lewis Lipnick—Professional Musician," I believe he has reached the zenith of blowing his own horn. (Oh my God, now I'm even doing it!) He then goes on to describe what it's like to sit right smack in front of the full brass section of a symphony orchestra (composed of 103 other professional musicians), and I'm thinking to myself: "Can this guy actually hear anything anymore? No wonder he liked the B&W 800s in a small room. His idea
To Whom It May Concern;

I recently purchased a 4-meter run of your Reference Series Type 2 interconnect cable. Without even breaking them in, they have to be the finest cables that I have never heard. (Sounds like a new slogan— "The finest cable you have never heard").

It seems as though every other cable that I have tried invariably shines in one or two areas as one runs down the usual audiophile checklist (i.e. sound staging, tonal balance, focus, etc…), but somehow always leaves one thinking that something is missing or that there is too much of something. I always thought that I had assembled a reasonably good system, but it wasn't until I inserted the Type 2 that I realized I have never heard it the way it should sound. At times, I can actually sit back and listen to real musicians playing in real space.

I think my next move is to slowly replace all of the cable and wire in my system with XLO. The wire tangle presently includes Monster Cable, Straightwire, MIT, and OCOS. Anyway, kudos, hosannas, yippee, and thanks for making "The Best In The World."

Sincerely,

Mike Kanai

P.S.: Present system, F.Y.I.

Versa Dynamics 1.2
Immedia RPM 1
Graham 1.5t
Clavis
Genesis 2000
Vendetta Phono Section
Audio Research LS-2
Mark Levinson 23
Apogee Duetta Signatures
of ‘realistic’ listening levels is probably about 115dB.

Then came the punch line. After reading the technical descriptions of the various Cello components and anxiously looking forward to Lew’s listening evaluation to see if he could find any flaws in this extraordinary system, I read Lew’s description of “The Bear Cave.” I was laughing so hard I had to put down the magazine and go towel off. The Cello system, which was obviously designed for large-to-immense listening rooms, was going to be auditioned and reviewed in a room of less than 1400ft² of space (not including the space between Lew’s ears). When he said that Mark Levinson was “rather concerned” about the size of his listening room, I thought I was gonna die. I could just picture poor Mr. Levinson, whose typical Cello customer must have a dedicated listening room about the size of, well, a bigger cave than Lew’s, almost certainly, wondering how anyone could do a proper evaluation of his magnificent products under these conditions. To say that this system was designed for a different application would be an understatement.

With a loudspeaker sensitivity of 96dB/W and 400W of amplification, I’m sure Mr. Levinson wasn’t concerned about whether or not the system would play loud enough. When Lew said “these speakers can move a lot more air,” my response was: “Yeah, I bet they can. The internal volume of the speaker cabinets is about the same as that of your room, you goofball.” Made the upstairs floor flex, did they, Lew? It’s a miracle they didn’t blow the friggin’ roof right off! The Bear Cave the first time Lew played one of his National Symphony Orchestra recordings (which he, of course, actually played on and was, of course, actually in the same room when they recorded the damn thing, you know) at “realistic” levels.

Next time his orchestra has a recording session, ask Lew if he thinks they should do it in somebody’s living room. He is apparently a master of space utilization. If he thinks the Cello system sounds good, wait ’til he hears one of those 5000W, 18-speaker, 15”-woofer, megahertz, vibrator-seat car “audio” systems shoehorned into a Toyota Tercel with the back seat removed to make room for the bass-box, which is all the rage with high school kids these days. Man, can they move some air, dude! If only Lew had supplied us with a photo of the complete Cello system set up in The Bear Cave, the joke would have been complete. But, alas, try as he might, poor Lew probably couldn’t fit himself, the Cello system, and a camera into The Bear Cave all at once! Lon Thompson Tequesta, FL

Magic?

Editor: Having read Lewis Lipnick’s review of a Cello system, I thought you might be interested in a Cello customer’s view of his system. To that end, I am reproducing a note I sent to Mark Levinson a while back that expresses my joy at owning a Cello system. Perhaps he will not mind that I am repeating to others my private comments to him:

“Several years ago, in despair at the apparently planned obsolescence of my ‘high end’ audio gear and its exponentially declining value—which did not resemble an investment in good sound—yet merely a sink for money, and which perpetually disappointed my search for music—I began, as you know, to build a system of Cello components. First, I acquired an Audio Suite, next an Encore amp. Then, to my great amazement and undying gratitude, you built a pair of speakers for me that subsequently were christened ‘Stradivari Masters,’ serial Nos.001 and 002. Most recently, I added a Cello D/A converter to the system. The result is a level of musical enjoyment that has made me forget completely about audio equipment. In fact, I only think of the equipment when I think with pleasure of my acquaintance with you.

“As you know—and anyone who plays music knows—one derives immense musical pleasure from a certain quality of sound that one coaxes from one’s own instrument. Hours of work and study are devoted to shaping phrases, to discovering how to extract the music from the mute notes on the page. Fine artists consistently achieve this level of performance (alas, I hardly ever do), and almost no hi-fi system can recover this magic. Cello does. Like my piano, it enhances my life.” J. David Rawn Towson, MD

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*Stereophile - Vol. 9 No. 6, September, 1986.
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US: Kristen Weitz
Dealers promoting manufacturer and designer seminars should fax me (don't call) the when, where, and who at (505) 983-6327 at least eight weeks before the month of the event—ie, if you're putting on something in December 1995, you should get the information to me by October 1, 1995. Mark the fax coversheet "For the attention of Kristen Weitz—Dealer Bulletin Board." Promoters of hi-fi shows and audio societies promoting manufacturer visits should also fax me the details as soon as possible.

Arizona: On Tuesday September 26, The Arizona Audiophile Society will present an evening with Balanced Audio Technology's Stephen BednarSKI, who will musically demonstrate their VK-5 preamplifier and VK-60 power amplifier. This event will be held at 7pm at the Paradise Valley Community Center, 17402 N. 40th St., #D-1, Phoenix. For more information call Lew Halman, President, at (602) 246-9368.

David Davenport and Tom Rotnermél announce their new business, Hume Record Works, Ltd., which specializes in the mail-order sale of new and used vinyl of outstanding musical merit. They also distribute new vinyl to other record retailers. Hume Record Works, Ltd. have recently been chosen by Classic Records to be the exclusive distributor for the Alto EMI reissue series. Hume Record Works, Ltd. is located at 509 W. 15th St., Tempe 85281. Tel: (602) 331-0756. Fax: (602) 968-8382.

California: On Saturday August 26, from 11am to 1pm, Richard Vandersteen of Vandersteen Audio will hold a seminar at Performance Audio (2847 California St., San Francisco). Call (415) 441-0287 for more information.

Florida: The South Florida Audio Society's August meeting will be held Friday August 25 at 7:30pm. The special guest at this meeting will be NHT's Ken Kantor. Call Michael Breiter at (305) 752-9877 or Max Maximov at (305) 973-3283 for location and more information.

Georgia: On Sunday September 17, Bill Dudley of Legacy Audio will conduct a loudspeaker and electronics seminar for members and guests of the Atlanta Audio Society. Products featured will be Legacy's Whisper and ACT II loudspeakers and their line of preamps and power amps. This event will be held at 2pm at the Hellenic Center, 2124 Cheshire Bridge Rd. NE, Atlanta. For more information call (404) 876-5659, or access them via the Internet at kelso@uga.cc.uga.edu.

Hi Notes announces the grand opening of a new store at 919 Carroll Street in Perry. Hi Notes will offer products from Acurus, Airon, Conrad-Johnson, Forsell, Highwire, Kimber Kable, LA Audio, Quantum Sound, Spectron, and many others. Acoustic treatments from ASC, Systems Development Group, and SigTech will also be featured. Call (912) 987-9491 for more information.

Illinois: On Tuesday August 22, from 7pm to 9pm, Audio Consultants' Hinsdale store will host a seminar featuring Proton Corporation's Bill Tovatt, who will examine a number of television-related issues, including: the TV of the future; what we will watch on it; HDTV; when it will be available; and whether it will be compatible with current formats. Seating will be limited, so call (708) 789-1990 for a reservation.

Tovatt will present the same seminar the next evening—Wednesday August 23, from 7pm to 9pm—at Audio Consultants' Libertyville store (757 N. Milwaukee Ave.). Again, seating will be limited, so call (708) 362-5594 for reservations and more information.

On Tuesday September 12, from 7pm to 9pm, Audio Consultants' Evanston store (1014 Davis St.) will host a seminar featuring B&W Loudspeakers of America's John McIntosh, who will demonstrate the Nautilus loudspeaker. We are told the Nautilus is B&W's highest achievement so far. Seating will be limited, so call (708) 864-9565 for a reservation.

Indiana: Concentric Speaker Technology, Inc.'s Halogram, Compact Bass Reference Subwoofer, and Compact Reference loudspeakers will be distributed in the US by The Elusive Disc, 1022 Rolling Barrel Rd., Pendleton. Tel: (800) 782-3472. Fax: (317) 778-2669.

New Jersey: On Friday September 15 at 7:30pm, The Audiophile Society will hold its monthly meeting at the home of Ralph Glasgal in Rockleigh. Glasgal will present a preview of the paper he will be giving at the 99th convention of the Audio Engineering Society at the Javits Center in early October. His subject: "Audiophonics, the Synthesis of Concert-Hall Sound Fields in the Home." Glasgal's talk will be illustrated with overheads and slides. One of the topics to be addressed will be why so many audiophiles and reviewers are sensitive to differences in amplifiers, cables, DACs, etc. At the end of the meeting, all attendees will be invited to audition the latest version of the Glasgal Audiophonics listening room. For more information, contact the Audiophile Society at (201) 748-7230.

On Saturday September 30, from 11am to 4pm, Legacy Audio will host a seminar featuring engineer/designer Bill Dudley, who will discuss acoustical theory and demonstrate the new Whisper and Focus II loudspeakers using Legacy's electronics line. Guests will be invited to attend an evening piano performance following the meeting in New York at Carnegie Recital Hall. For meeting information, call Tony Titone at (800) 283-4644.
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WorldRadioHistory
New York: Sound Advice, Altair Audio's (1980 Central Ave., Albany) call-in radio show, is broadcast Thursdays on WQBX AM 1300 at 8pm. The September 7 show will feature Acoustic Research's Ken Linde. The September 14 show will feature Martin-Logan's Brent Hefley, who will be at the store from 5:30pm to 7pm. And the September 21 show will feature California Audio Labs, direct from the West Coast. Call (518) 452-3525 for more information.

On Friday September 8, The Musical Audiophile Society will host a Chinese banquet/presentation featuring Gallo Acoustics' Anthonys Chiarella and Gallo, who will demonstrate the Nucleus™ loudspeaker system and Baseball™ Auxiliary Warning Module. Particular attention will be devoted to the new driver, enclosure, and materials concepts developed for use in the company's products. The meeting will be held at 7pm at Triple Eight Palace, 88 E. Broadway, New York City. Call (718) 237-1004 or (718) 237-1000 for more information.

Long Island dealer Select Sound will celebrate their 10-year anniversary in October with Long Island's first High-End Audio & Home Theater Show. B&O, Krell, Meridian, Naim, Pioneer Elite, Rotel, Totem, Rock Solid, and WireWorld will show off their components and systems. Guest speakers will talk about their products and the future of the High End. Call Select Sound at (516) 624-2124 for the exact date and time.

The 99th Audio Engineering Society Convention, "Audio in an Interactive World," will take place at the Jacob K. Javits Convention Center October 6-9. Call the AES at (212) 661-8528 for more information.

Washington: On Saturday September 23, Nuts About Hi-Fi (10100 Silverdale Way, Silverdale) will host Stereophile's Robert Harley, who will give a free seminar on getting the best sound from your system. Bob will also answer questions about your system and room and sign copies of his book, The Complete Guide to High-End Audio. The seminars will be at 4:00pm, 5:30pm, and 7:00pm. Seating is limited, so call (206) 698-1348 for a reservation.

Singapore: Robert Harley
The fifth High-End Audio and Home Theater Exhibition/Seminar (HEX 5) will take place September 1–3 at the Orchard Parade Hotel in Singapore. The show will be a mix of local audio retailers and international manufacturers demonstrating their products, and will include a series of seminars for the public on various aspects of high-end audio and Home Theater.

The show is organized by AudioCraft Publishers, 49 Jalan Pintau, Singapore 2057. Tel: (65) 553-4710. Fax: (65) 553-4712.

US: John Atkinson
The "Ask the Editors" sessions at Stereophile's High-End Hi-Fi Shows—commonly nicknamed "reviewer roasts"—are perennially popular. So popular, in fact, that we are often asked why we don't sell recordings of them to readers who couldn't make it to the Show. So, we're recording all eight hour-long sessions at Hi-Fi 95 and will release them on analog cassette in the very near future. Watch this space for details on how to order the tapes.

US: Peter W. Mitchell
In the April issue, TJN and I reported on a comparison between two multichannel formats for surround-sound: Dolby's AC-3 and DTS's Coherent Acoustics (formerly Zeta) systems. AC-3 is already a standard for the 5.1-channel sound on new laserdiscs of movies, while DTS coding has been shown to deliver excellent discrete surround-sound in CDs of music.

But as TJN predicted in April, the most important competition between these formats may be in the Digital Video Disc (DVD), which will be launched next year. When proposals for the DVD were first unveiled last winter (by Sony/Philips and by Toshiba/Warner), each version reserved a block of 384kb/s for audio in the bitstream—the same block that is reserved for the multichannel sound of HDTV.

That led to a widespread assumption that AC-3 is likely to become the primary standard for audio in NTSC television markets (North America and Japan), while the Musicam/Surround system from Philips would become the primary standard in PAL markets (much of Europe). During the June CES (the Specialty Audio & Home Theater Show), Dolby proudly announced that it was indeed selected as the primary audio standard for the Toshiba/Warner DVD, which also is known as the SD (Super Disc) format.

The version of DTS coding that we know to sound good (see the report by TJN and JA in the March issue) has a total data rate of 1.44Mb/s for its six channels—nearly the same total as that for the stereo CD. DTS vowed to design a lower-rate coder for DVD. To meet Toshiba's requirement that the data must be formatted as a fixed-rate 384kb/s code, DTS developed a variable-rate coder that operates within a 384kb/s frame. It works at a high data rate for a fraction of a second to handle loud high-frequency transients, uses a low rate for bass and quiet moments, and yields a 384kb/s average rate. During the spring, DTS insisted to Toshiba and MCA/Universal that its system would sound better than AC-3, so the Toshiba/Warner DVD Alliance agreed to a showdown between AC-3 and DTS. (People who prefer less combative language have been calling it a bake-off or a comparative demonstration. But make no mistake: this is high-stakes competition, so everything about it—including its meanings being contested by partisans for two warring camps.)

Dolby partisans insisted that AC-3 had already been selected as the standard and that the showdown was merely frosting on the cake. DTS partisans anticipated that the DVD Alliance would select the best-sounding system and that the superiority of DTS coding would become evident during the showdown.

In late June it seemed that the showdown might not occur at all; a letter from MCA to Warner withdrew MCA's bid for DTS, and selected the primary audio format for SD-DVD. Then, another letter from MCA retracted the withdrawal, and the showdown was on again. It was planned to occur in two stages. First, in Japan during the week of July 3, Dolby and DTS would demonstrate their coders in "real time," allowing Japanese judges to compare encoded/decoded sounds against each other and against unprocessed source signals. Then the real showdown would occur a week later in Los Angeles, under guidelines that would ensure a fair and balanced but revealing comparison.

The showdown became a popular topic of rumors and advance speculation, leading to a flood of fax and e-mail traffic (much of it containing conflicting claims and more speculation) during the days and weeks after the sessions in Japan. Apparently there were no
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independent observers at the sessions, so I’ve tried to distill a clear story from the reports of the partisans by boiling off obvious “spin” and discarding intriguing rumors that I know to be false.

The following seems to be true: Dolby AC-3 coding was successfully demonstrated in real time, but the 384kb/s DTS real-time coder wasn’t ready. The DTS coding algorithm was said to be complete, but the hardware couldn’t be made to work reliably. Since 384kb/s DTS coding could not be demonstrated in real time for the DVD group at Matsushita, sample recordings were played that had been made earlier in L.A. The source tape for those recordings was encoded in real time by AC-3 for comparison.

Depending on whose version you believe, either AC-3 clearly sounded better than the 384kb/s version of DTS, or both 384kb/s signals sounded inferior to the unprocessed source. In a second demonstration two days later at Pioneer, DTS played the excellent big-band surround-sound CD that Tom Jung recorded for the DMP label (using 1.4Mb/s DTS code), and also played a copy of the same recording in 384kb/s DTS code for comparison. Reports differed about whether the latter was obviously inferior.

Dolby partisans could claim a comfortable victory in the Japanese sessions, since the AC-3 coder operated consistently in the real-time demonstrations and it sounded reasonably good. Since the prerecorded DTS material did not unambiguously prove the promised superiority of DTS over AC-3, Dolby’s position seems secure for now. In order to unseat the presumed choice of AC-3 as the primary standard for the Toshiba/Warner DVD, DTS would have to demonstrate an advantage in sound quality or coding efficiency.

AC-3 partisans could only promise that their system will prove itself in the second (and final) stage of the showdown. Initially this was planned to take place on July 12 at Snell’s technology center in Los Angeles, where Kevin Voeks fine-tunes the sound of Snell speakers. But in order to give DTS time to get the bugs out of its malfunctioning coder, the L.A. session was postponed until mid-August. So this story appears to have an anticlimax instead of a conclusion. As I write this in mid-July, I was hoping that the showdown would have produced a definitive result already, but that will have to wait a month.

Even if DTS doesn’t replace AC-3 as the primary audio code in DVD, DTS may yet have a future in the new medium. The Toshiba/Warner “Super Disc” is a flexible medium in which data may be formatted in a variety of ways. “SD-ROM” discs would carry computer data, similar to CD-ROM. “SD-Audio” discs would contain mainly audio with optional video, perhaps carrying two to six channels of 20-bit PCM with a 96kHz sampling rate. The standard SD system, called “SD-DVD,” normally would contain up to 135 minutes of MPEG-2 compressed digital video plus an audio code. The audio may include one to three 384kb/s 5.1-channel digital audio programs.

The Toshiba/Warner DVD Alliance Agreed to a Showdown Between AC-3 and DTS.

Discs in different languages, or it could be a two-channel AC-3 signal intended for surround decoding via Dolby Pro Logic.

At the producer’s option, a DVD disc could carry both an AC-3 signal and a stereo PCM track (or AC-3 and 14Mb/s DTS) by sacrificing some playing time or picture quality. Only the primary audio code (presumably AC-3) would be decoded by the DVD player. Any secondary audio signal (eg, PCM or DTS) would be fed through an S/PDIF connection to an outboard decoder. Normally the primary audio signal would be a 384kb/s code, but the standard permits 448kb/s instead. And if DTS puts its 14Mb/s Coherent Acoustics signal on the secondary audio track, Dolby could use the same capacity for a high-performance 640kb/s version of AC-3.

Most of the rumors and speculation about the summer showdown between DTS and AC-3 focused on whether DTS could replace AC-3 as the primary audio standard in DVD. If that were to occur, the payoff for DTS could be huge. But DTS could have a second goal in mind: planting the seeds to make DTS coding the standard for the SD-Audio disc—the main audio version of the high-density DVD.

Most people who have discussed the prospects for a high-density Super CD—for example, the Acoustic Renaissance for Audio group in England (see Stereophile, August 1995, pp.53-66)—have emphasized that it could carry several channels of 20-bit PCM with 96kHz sampling. The usual assumption is that these would be straight linear PCM channels with no data compression. This may be theoretically ideal, but it also may be overkill; 20-bit coding at 96kHz yields a data rate of 1.9Mb/s/ch, or 10Mb/s for 5.1 channels. Having a disc with a large data capacity doesn’t mean that we have to use it wastefully. Data compression has earned a bad reputation because it led to obvious sonic compromises (early AC-3 and MiniDisc, for example). But there may be room for a middle ground, a “subjectively lossless” compression system that would reduce data rates with absolutely no audible compromise.

When TJN and JA evaluated the 1.44Mb/s DTS “Zeta” coder (now called Coherent Acoustics Coding, or CAC) in the March ’95 Industry Update (Vol.18 No.3), they found it to be “phenomenally good” but perhaps not perfect, with a slight loss of air. Recently, whenever Mike Smyth (chief design engineer for DTS) has discussed the variable-rate version of CAC, he has consistently emphasized the point that, in addition to being able to operate at very low data rates in order to achieve a 384kb/s combined rate for 5.1 channels, it also can operate at maximum rates of up to 3Mb/s–4, 500kb/s/ch. And it can handle data coded with high resolution (20-bit or better), or high sampling rates (96kHz or higher). We know that six-channel CAC is nearly transparent at 1.44Mb/s (240kb/s/ch), so it might be subjectively flawless at double that rate while delivering six 96kHz channels of 20-bit audio at a 4:1 data-compression ratio.

The folks at DTS insist that their plan (and, indeed, their expectation) is that, in the showdown between competing 384kb/s coders in August, they will pull a giant rabbit out of the hat in the form of a surprise victory over AC-3. But to an outside observer—even one who has been impressed by the excellence of CAC at 1.44Mb/s—that outcome seems very unlikely. It’s easy to regard DTS as the valiant underdog in this battle, and rooting for the underdog is as American as baseball. (Perhaps that’s not a good analogy, since baseball was destroyed last year by individual and corporate greed.)

But it’s difficult to imagine how DTS, with only a handful of engineers, could succeed at a task that Dolby’s large staff of very smart engineers has not accomplished in years of trying: flawless 5.1-channel sound at 384kb/s. If DTS does...
But the real reason to visit your Quad dealer is to listen to the 77 system. Hear for yourself why Quad should be your hi-fi company in the 1990's. And why it will be your hi-fi company in 2010 as well.
succeed, I'll be extremely surprised but cheering enthusiastically. So I think it would be a smart move for DTS to have a second option up its corporate sleeve—a demonstration along the lines of the preceding paragraph that would show the DVD Alliance how, by using the high-rate version of SAC in the SD-Audio disc, they can provide flaw-
less digital sound for the next generation.

I'd like to take credit for this idea, but in the spirit of giving credit where credit is due, I have to confess that this speculation about alternative DTS plans came from a correspondence with Roger Dressler at Dolby. Confident that DTS cannot outperform AC-3 at 384kb/s, Dressler suggested that focusing on the purist audiophile segment of the market might be the best way for DTS to build on its strengths. An interesting battle might develop as advocates of perfectly lossless (but wasteful) coding compete with proponents of lossy (but efficient and subjectively flawless) coding.

Incidentally, while gathering information for this report, I was surprised to learn that all of the coding systems that have been proposed by DTS for consumer use (including Zeta, CAC, and the current proposal for DVD) have been based on a 32-band digital filter that is part of a perceptual audio coding system. This was surprising, because since last winter, DTS coding has been a popular topic of discussion in audio and Home Theater magazines, yet the fundamental fact of 32-band coding has generally gone unmentioned. Most audio writers seem to have been unaware of the essential role that 32-band perceptual coding has played in all DTS coders for consumer use. (In perceptual coders, portions of the audio signal are deliberately not coded; they're discarded because they are thought to be below a perceptual threshold.) In this respect, DTS coders are similar to Dolby AC-3 and the Philips PASC coder in DCC recorders.

Since the sound of AC-3 in movie theaters (a 320kb/s bitstream) has been widely and justly criticized for metallic sound, I should point out that the version of AC-3 proposed for use in DVD is the same 384kb/s signal as the AC-3 code in new laserdiscs. As I mentioned in April, while the decoding logic for AC-3 was frozen last year and is being mass-produced as a Zoran IC, the design of the AC-3 encoder is still being fine-tuned for improved performance. So instead of being a piece of mass-produced hardware, the AC-3 encoder still is a software engine (written in C) operating in a PC that is stuffed with Ariel DSP cards. One of these PCs was used for the real-time AC-3 coding demonstrations in Japan, while the simultaneous decoding was handled by a Zoran IC. In April '95 I also mentioned that AC-3 decoders in movie theaters are equipped with a "dynamic down-
loader" function, through which many of the improvements in the 384kb/s consumer version of AC-3 will be tran-
sition of current THX Timbre Matching. Bass Management will provide various options for routing the bass signals from the full-range channels and the low-frequency effects (LFE) channel. It will also include a low-frequency overload control—not all subwoofers will be able to handle the full output of the LFE. The remaining added feature, Position Time Alignment, provides compensation for loudspeaker location.

Re-Equalization™ correction for excessive brightness in film soundtracks when played back in the home—will remain as a feature in the new processors.

Needless to say, all of this manipulation will require the use of DSP. The THX code is available now for the Motorola DSP56000 family of processors.

While most of these additions are unlikely to be controversial, the Dynamic De-Correlation feature may cause a mild ripple. It will require an instant-by-instant analysis of the signal by the DSP, turning the decorrelation on instantly when needed and off when not required. With DSP, it should be possible to do this seamlessly, but only when we can get our hands on a suitable processor (none are yet available as I write this) and a sufficiently broad selection of 5.1-channel material will we know for certain.

The philosophical implications—now that we have discrete surrounds, isn't the mono or stereo use of those surrounds the director's decision to make?—won't be resolved as easily.

US: Peter W. Mitchell

Over 15 million Dolby Surround processors—including basic Dolby Surround units, Pro Logic decoders, and Home THX equipment—are in use around the world. Discrete digital formats (laserdiscs with AC-3 and CDs with DTS Coherent Acoustics coding) may deliver the clearest ambience and most precise localization, but for the foreseeable future, most surround recordings and broadcasts will be produced only with matted Dolby Surround encoding. So there is a definite need for test discs that will help installers and consumers to judge decoder performance and fine-tune surround systems for best results. A new two-disc set from Delos meets that need. "Surround Spectacular" (Delos DE 3179) contains two discs in a "slimline" case no thicker than a normal one-CD jewel-box. Disc one contains 21 excerpts of classical music (66 minutes) drawn from the Delos catalog. Half are orchestral while the remainder feature solo instru-

Dolby Partisans

COULD CLAIM A COMFORTABLE VICTORY IN THE JAPANESE SESSIONS.

With the coming of 5.1-channel surround-sound for Home Theater in the form of Dolby's AC-3 and, perhaps, DTS's Coherent Acoustics (see above), THX has updated their specifications so that future THX processors can provide new capabilities.

THX's 5.1-channel processing will incorporate Dynamic De-Correlation™ stereo 20kHz Timbre Matching™ Multi-Channel Bass Management™, and loudspeaker Position Time Alignment.

Dynamic De-Correlation will perform much as current THX De-Correlation, but only when there's no discrete information in the surround channels—when the surround signal is monophonic. Stereo 20kHz Timbre Matching is a frequency-extended ver-

Stereophile, September 1995
ments, voices, pipe organ, and small ensembles. All of the recordings were engineered by John Earglde, who in recent years has been archiving the individual microphone feeds for all of his recordings on a Tascam DA88 discrete eight-channel digital recorder. While Delos recordings are now being issued with matrixed Dolby Surround encoding, in the future Delos also will be able to issue the same recordings in all-digital 5.1-channel discrete surround using either Dolby AC-3 or DTS coding.

Ideally, disc one should be played only after you've finished using disc two to help you select a good surround processor and fine-tune your system's operation. With a first-rate Pro Logic system, these tracks dramatically illustrate the different character of the ambience in a variety of environments—concert halls, churches large and small, and recital rooms with warm or lively acoustics. The booklet includes John Earglde's notes on what to listen for in each excerpt. There are things that you should hear on any system—for example, in Handel's Water Music, the differing way a concert hall's ambience responds to trumpets (aimed directly at the audience) and French horns (whose bells face backward, producing mainly reflected and ambient sound). There also are things that you may not hear if your speaker setup or decoder separation is non-optimum (such as the placement of the offstage horns at the back of the hall in Respighi's Roman Festivals). Incidentally, if you read the notes while listening to the disc, you may find that the Dvorak and Vivaldi tracks are discussed in reverse order. (Perhaps this will be fixed in a revised printing.)

Disc two begins with seven tracks of on-location sound recorded outdoors by Brad Miller of Mobile Fidelity in Nevada (not to be confused with MFSL, Mobile Fidelity Sound Labs) using a coincident four-mike array. These include aircraft, trains, fire engines, rain, and surf.

Tracks 8-49, produced by Stereo Review's Technical Editor, David Ranada, include some specialized tests that Ranada created for his own use in reviewing surround processors. (Ranada majored in both music and digital electronics at Harvard.) The test signals were created on a computer whose sound card had an S/PDIF output, so the digital signals were transferred directly from the computer to DAT and thence to the CD master without going through the analog domain. Ranada's very comprehensive notes in the 20-page booklet provide detailed guidance on what to listen for and how to fine-tune your system for better performance—in two-channel stereo as well as in surround setups.

For example, track 12 is a particularly challenging test of how well the two speakers in a stereo pair are matched, not only broadband but at individual frequencies from 100Hz to 13kHz. The track contains a series of 22 narrow, 1/3-octave bands of mono pink noise, each of which should form a narrow phantom image in mid-air on the centerline between the speakers. If the image pulls to one side (or becomes non-localizable) at certain frequencies, this may indicate a mismatch in a specific driver, in a crossover, in a tweeter-level control, or in the reflective acoustical environment around either speaker. Track 13 repeats this test with tracks that should image at the half-left and half-right phantom locations between the center and either speaker. Even if you do not have a surround processor or a Home Theater system, these very useful tests of the matching of stereo speakers may be valuable enough to justify purchase of this set.

There are several tracks to evaluate the performance and location of a subwoofer and to check the phasing of its
The remaining 20 tracks are for surround-system testing, phasing, and adjustment, including tracks to test the phasing of the center speaker and clicks to evaluate the behavior of the electronic reverberation circuits in the non-Dolby modes of some surround processors. Track 34 repeats the half-left and half-right test from track 13 with Dolby Surround encoding, so it may reveal either a misbehavior in your decoder's center-channel output or imperfect matching of your center speaker relative to your left and right speakers. Since your center speaker probably contains different drivers and crossover circuits than your left/right speakers, a mismatch at some frequency is particularly likely.

In summary, this disc is a valuable tool for installers and users of all-Dolby surround systems, and you might also want to take it to the store when you go shopping for a center speaker, surround speakers, or a complete surround system. Most CD stores should have the Delos *Surround Spectacular*; if you can't find it, phone Delos at (800) 364-0645.

**US: Thomas J. Norton**

Readers who are uncomfortable with do-it-yourself audio projects but who need a simple high-pass filter to use in conjunction with a subwoofer will want to know about the in-line filters marketed by Audio Concepts of La Crosse, Wisconsin. There are two versions—brown and purple—which have slightly different 3db-down points. These are simple in-line filters: one end plugs-in to your power amplifier, and a female RCA jack on the other end of the filter accepts the signal from the output of your preamp. Like all such simple filters, the Audio Concepts crossover frequency will depend on the input impedance of the amplifier it's used with. You should check with Audio Concepts for more specific details. While the filters are marketed primarily for use with Audio Concepts' Titan powered subwoofer, which does not have a built-in high-pass filter of its own, they may be purchased separately from Audio Concepts for $29/pair. Audio Concepts is located at 901 S. Fourth St., La Crosse, WI 54601. Tel: (608) 784-4579. Fax: (608) 784-6367.

**US: Peter W. Mitchell**

The direct route to good Home Theater sound is to buy a matched system of five surround speakers and add a subwoofer or two. But if you have a special fondness for the sound of your stereo speakers, then you face the challenge of adding a center-channel speaker and a pair of surrounds that match the timbre of the speakers you already own. That can be difficult—especially if your speakers are unusual in any way.

Even if you do succeed in selecting well-matched speakers, their sound is likely to be affected by the disparate acoustic environments. Your main L/R speakers are probably freestanding, away from walls, but your surround speakers are likely to be mounted on or near the walls and perhaps near a wall-ceiling junction, and the proximity of those boundary surfaces is likely to reinforce the upper bass and color the midrange. And the placement of the center speaker, on or under a TV cabinet, may affect its response.

The Rialto, a new product from Audio Control, may help you obtain a better sonic match among the channels. Basically it's four equalizers in one box: a stereo equalizer (11 bands, each 3⁄ octave wide) for your left/right speakers, an identical equalizer channel (11 bands, each 3⁄ octave) for the center speaker, a stereo equalizer (five

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bands, each two octaves wide) for the surround speakers, and a narrow-band stereo subwoofer equalizer (seven bands from 25Hz to 100Hz, each only ½-octave wide) to smooth out standing waves.

The Rialto also includes some other useful functions: a subwoofer crossover (with either 18 or 24dB/octave slope and your choice of turnover frequency), adjustable infrasonic filters to prevent bass-reflex woofers from being overdriven with unwanted lows, input and output level-matching controls (since you may be using power amplifiers of different sensitivities in your various channels).

More product news: When I praised the Snell RCS-1000 six-channel digital room-correction system in my 1995 WCES Report in April (Vol.18 No.4), its price was projected to be $12,000. Now that it's actually in production, with improvements that correct each channel's amplitude and phase response from 5Hz to 20kHz, its price is $8900. [Snell announced at the CES Specialty Show in Chicago in June that, although a product's price usually reflects a proportion of R&D costs, they had decided to write off that well-into-six-figures sum in order to maximize the potential market for the technology—Ed.]

Snell is also introducing a full system of in-wall speakers for unobtrusive Home Theater systems. The main drawback of most in-wall speakers—whether mounted directly on the wallboard or mounted to the framing members that the wallboard is mounted on—is that vibrations from the speakers tend to set up severe upper-bass resonances in the wallboard, coloring the sound. To minimize this, the Snell speakers are self-enclosed cabinet systems narrow enough to fit between the framing members. The series includes LCR (front) speakers, dipole surrounds, a rear speaker, and a subwoofer—all in cabinets designed for flush-mounting within the wall.

US: John Atkinson

After many years located at what was once the site of Music By The Sea in Lucadia, a few miles north of San Diego, McCormack Audio has moved to a new 800082 facility in Carlsbad. Their new address is McCormack Audio Corporation, 5421 Avenida Encinas, Suite J, Carlsbad, CA 92008. Tel: (619) 930-9550. Fax: (619) 930-9555.

US: Peter W. Mitchell

As I reported here in July 1994 (Vol.17 No.7), transmitters and receivers for seven proposed digital radio systems were delivered to a test center in Cleveland during January 1994 for evaluation by EIA engineers. The plan was to complete the tests last fall, evaluate the data last winter, and publish a report in time for the National Association of Broadcasters convention in Las Vegas during March. But the project is several months behind schedule. At the NAB convention, with no final report to discuss, engineers debated the testing and the merits of the various systems.

USA Digital Radio, developer of an "in-band" simulcast system that appeals to broadcasters because it would run on existing FM and AM stations, conducted public demonstrations of its system via receivers in shuttle vans that drove around Las Vegas during the convention. Listeners in the van wore headphones and could switch between conventional FM stereo and the digital signal transmitted by the same FM station. The coding and decoding of the digital signal produced a couple seconds of delay, so listeners could hear the analog FM signal and then switch to hear the digital broadcast of the same musical phrase. But careful A/B comparisons weren't needed; when the van drove along the street in front of the Convention Center, multipath interference virtually destroyed the stereo FM reception while the digital signal remained clear and noise-free.

British and Canadian boosters of the European Eureka DAB system (which is about to commence routine broadcasting in London [UK], Montréal, and Toronto) complained that the USA Digital demonstrations in Las Vegas were not as problem-free as many observers thought. One of the designers of the USA Digital system responded that, while the demo was not flawless, the observed problems were mainly due to technical inadequacies at the FM station and could easily be cured. There also were arguments about whether the EIA testing program was equally fair to all of the candidate systems; these arguments will continue when test results are published in August. Meanwhile, USA Digital is sufficiently confident about its design that it signed a contract with National Semiconductor to develop the decoder chips that would be used in digital receivers if this system is approved next year by the FCC.

The in-band systems had to be modified during the test period and had to be retested, which was scheduled to occur during June. The final report on all of the lab tests and on comparative listening tests in Ottawa will be published at the end of August. "Field" tests, to confirm how well each system operates under real-world conditions (including traffic, bridges, tunnels, reception in moving vehicles, and multipath interference) will begin in August and will run through the fall in the San Francisco area.

The field test is supposed to include the Eureka DAB system, in order to provide a meaningful performance comparison between the in-band systems and the Eureka proposal. But since the latter is intended to use L-band frequencies, approval from a Commerce Department agency was needed for the test. This was expected to be a mere formality, but the agency refused to permit the testing, because the Pentagon won't allow commercial use of L-band frequencies anyway.

US: John Atkinson

In July (p.37) we reported that English engineer Chris Evans, one of the founders of Arcam and for the last few years the designer of a number of well-regarded NAD amplifiers, had left NAD. NAD has informed us that this is not true. Although Chris Evans is no longer an NAD employee, he is working for the company as a consultant. We apologize for the wrong impression we gave of Mr. Evans' status.

Switzerland: Igor Kipnis

Pianist Arturo Bendetti Michelangeli died June 12 in Lugano, Switzerland, at the age of 75. "A legend to his colleagues, who put him in the Horowitz class as a super-virtuoso," Harold Schonberg wrote of him, describing him in 1963 in The Great Pianists as "the most important Italian pianist after Busoni." In the 32 remaining years of Michelangeli's life, there has been little, if any, reason for changing the opinions of the pianist's peers, the comments—not always uncritical—of Schonberg, or the adulation of the pianist's many admirers. Michelangeli was born in Brescia, Italy, in 1920. He studied with his father, and, after appearing in public as a prodigy, studied with Giuseppe Anfossi at the Milan Conservatory between 1930 and 1933. By 1939, when he became a professor at the Martini Conservatory in Bologna, he had that same year won first prize at an important Geneva competition. During the Second World War, he
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served as a lieutenant in the Italian Air Force and subsequently began his international career in the mid-'40s, making his debut in England in 1946 and his American one just two years later. Although he had already recorded, it was the eight His Master's Voice 78rpm discs that brought him worldwide recognition. I greatly admired these performances of the Busoni arrangement of the Bach Chaconne and the Brahms Pagannini Variations upon first hearing them as a piano student. I also recall being puzzled by what seemed to me at the time a rather willful mixing of the sequences of both books of the Brahms set—an individual interpretive approach that in many ways was typical of the Italian pianist throughout his entire career.

His choice of repertoire—in concert and for recording—was strangely circumscribed: a number of standard works by Chopin, Beethoven, Scarlatti, Liszt, Debussy, Ravel, Mozart, Schumann, and Rachmaninoff, plus a handful of relatively obscure shorter works by such earlier Italian composers as Galuppi or Tomeoni. If Horowitz was apt to play Chopin's Ballade 1 in G-minor as frequently as possible (every one different, almost as though he were desperately looking for his ideal performance), Michelangeli did the same with such Chopin pieces as the Second Scherzo. In general, he tended in his invariably sold-out concerts to repeat the same brief list of compositions, but the overriding question to the ticket purchaser was whether he would in fact appear as scheduled. The joke bandied about was that, as a concert performer, Michelangeli was available for a certain number of cancellations.

In 1966 I was fortunate enough to hear him at New York's Carnegie Hall; this was part of his second tour of the United States (he canceled midway through his first tour because, it was said, he felt he was being promoted in the manner of a circus performer). As he stepped out at the concert's start—from stage left, I recollect, rather than from the usual stage-right door—one saw a fairly tall, handsome figure, quite pale in visage but firm in step, with a trim mustache. He paid almost no attention to the audience, sat down, and played with scarcely discernible emotion, including, eventually, the ever-present second Scherzo of Chopin. The refined tonal palette he produced was full of light and shade, always most beautifully modulated but decidedly cool, though his effortlessly technical accomplishments just had to dazzle the ear. His playing, in essence, belonged—as it does in his many recordings—to the romantic style for its rhythmic freedom, such as the Stokowski ritanze that he invested in the cadences of his earlier repertoire selections. Dynamics, color, and effect held his interest, but, though I always found his playing of more than just great interest, the almost frigid undercoating of his interpretations invariably left me with a feeling of dissatisfaction.

His life throughout remained a most private affair; he was married, and his recreational interests included such dangerous activities (particularly for a pianist) as auto racing, mountain climbing, and skiing.

Yes, he was difficult personally, and he was reclusive. He could be incredibly demanding, and his willfulness sometimes caused projects to be canceled. One example was a set of the complete Beethoven concertos to be made in live performances with the Berlin Radio Symphony, when he proceeded to instruct the string players on how to bow their parts, the conductor walked out. I know, because I was recording for the Berlin Radio on the afternoon that Michelangeli was scheduled to pick out an instrument from a host of pianos prior to his first rehearsal. I was informed that I must finish my program before five, the time he was to arrive, and the recording personnel were very apprehensive about the time. As it turned out, he never did arrive that day. A few days later, presumably after he had chosen his instrument, he had the ill-fated rehearsal, the outcome of which I was told later.

He made many recordings, for EMI (his Rachmaninoff Fourth and Ravel G-Major Concertos of 1957 are legends) and, more recently, for DG, with various Debussy sets being particularly attractive. Asked for my favorite of his recorded performances, however, I would have no hesitation in naming Ravel's Gaspard de la Nuit. He never recorded the work commercially, but there are at least four separate live broadcasts performances (1957, 1960, 1962, 1969) available on such labels as Multisonic, Hunt, Memories, and Arkadia. Labeling by these small semi-pirate labels being what it is, I cannot be certain that their dates are accurate, only that another live performance—originally made for the BBC in 1959, and which I have only on tape—is the most vividly frightening interpretation of Gaspard that I could ever imagine.
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Dick Olsher, Stereophile, Vol. 17, No. 12, December 1994
Building Blocks for a Better System

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**A n a l o g C o r n e r**

Michael Fremer

"Why, there are more trees in the United States today than when the Pilgrims landed!" Rush Limbaugh proclaimed on his radio show a while back, launching an attack on the "environmental wackos" trying to scale back the clear-cutting of the last stands of virgin old-growth forest in the United States.

Limbaugh wasn't lying. There are more trees in the United States today than when the Pilgrims landed—if you count the tall, skinny timber growing crop-like on commercially managed tree farms: all the same species, all in a row.

But tree farms aren't forests, and Limbaugh's statistical abuse should be obvious to all but terminal dittoheads. Perhaps there are legitimate arguments for cutting down every last one of those magnificent old trees and for destroying what nature took millions of years to create. Perhaps quick cash in pocket and an ugly scar make more sense than creating an enduring tourist attraction that could generate revenue for hundreds of years. But Limbaugh didn't make the case.

**Audio/Video Exteriors**

What does all this have to do with audio? And, more specifically, analog? Well I just finished reading the Electronic Industries Association's CES press kit and the organization's yearly report, *The US Consumer Electronics Industry In Review '95 Edition,* and I was amazed by what I found—and, more importantly, what I didn't find.

How many times have you heard the word "laserdisc" uttered over the past few months? How many times have you seen it written about in the mainstream press, in the audiophile and videophile presses? I'll bet plenty. It seems to be the only source that gets written about, and it's certainly the only one taken seriously in the videophile press.

Yet, do you know what the "household penetration" of laserdisc players in the United States was as of January 1995, according to the EIA? Ten percent? Twenty percent? Five percent? Try about 1%. One percent penetration; 50% or more of the ink spilled on video sources in the major video magazines.

**Minidisc and DCC are the Two Biggest Bonehead Music-Carrier Flops in the History of Audio Since the Elcaset.**

"Oh, but with the increasing popularity of Home Theater, that number will be changing soon," I hear you saying. You're right. According to the EIA, dollar volume factory sales of laserdisc players went down from $123 million in 1993 to $122 million in 1994—that in the midst of the Home Theater buying frenzy.

By comparison, dollar volume sales of VCRs in 1994 were almost $3 billion! Yet the industry caters to every whim of the tiny laserdisc market segment. Caters? It just about kisses its collective rear end.

Oh, and of all that gelt dropped on VCRs in the age of Home Theater, what percentage of video recorders sold do you suppose were stereo Hi-Fi—necessary to set up a five-channel Dolby Pro Logic or AC-3 or DTS system? Sixty percent? Fifty percent? Forty percent? Try just 29%. Less than 1/6 of all VCRs sold last year had FM stereo soundtracks—up a piddling 3% from the year before.

**The Analog Shoe Drops**

Okay, you're waiting for the analog shoe to drop in this discussion. Well, keep waiting. Nary a statistic on turntable sales is to be found in the EIA report—not numbers sold, not dollar volume, not market penetration. LP playback isn't even a category.

We know turntable sales are up, both in the high-end and in the mid-fi marketplaces. We know LP sales are way up and that interest in analog is growing, but such information isn't here. You'll be happy to know, though, that market penetration of caller-ID units is at about 5%, and that the ever-critical multeline phone has stuck its nose into more than 10% of American homes.

I don't like picking a fight with the EIA. It's a very powerful organization, and I like the people there, many of whom I have worked with in planning and running seminars at Consumer Electronics Shows. But what is and is not in this report is infuriating.

Home CD-player penetration stats are in—what do you think? Eighty percent of American households? Seventy percent? Sixty percent? Try about 43%. What do you think the market penetration of turntables would be if they bothered to ask? I'll let you answer that one.

Mentions of MiniDisc and DCC—the two biggest bonchead music-carrier flops in the history of audio since the Elcaset—pop up all over this report like jack-in-the-box clowns. There are probably more references to MiniDisc and DCC—and their bright futures—

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1. While I deplore the clear-cutting of old-growth timber, I find it heartening to witness the return of trees in New England as land is made available from abandoned farms. But if people need wood, MF—and need it they do when you consider that this magazine is printed on a major wood product—then tree farming is the only sensible way this environmentalist wacko sees that it can be provided.

2. Single copies of The US Consumer Electronics Industry In Review '95 Edition, printed on recycled paper with soy-based inks, are available free of charge. Please send a $1.70-stamped, self-addressed, 6" by 9" envelope to the Electronic Industries Association, 2500 Wilson Blvd., Arlington, VA 22201-3834. —JA
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**LET'S PUT ON A SPECIALTY SHOW!**
To coincide with this past June's Specialty Audio & Home Theater CES in Chicago, the EIA conducted more specialized research the month before. Hopefully next year's "In Review" book will do a better job of highlighting trends in "high-end" audio, by opening up the "separate audio components" category into something meaningful.

**THE INDUSTRY PRESSES VINYL TO SERVICE THE DEMAND, BUT IT DOESN'T WANT TO ENCOURAGE ITS EXPANSION.**

Meanwhile, among the press releases in the EIA's June Show packet were two you'll find interesting: one, a survey of high-end audio dealers, found that 55% predicted an increase in sales of CD transports, and 26% predicted an increase in sales of turntables. Wait. Didn't I just read that turntables had been replaced by CD players?

A survey of 1200 households done by the EIA/CEG (Consumer Electronics Group) found that, when asked what specialty audio product they intended to purchase in the coming months, the largest number said power amplifiers. That was followed by audio CD players, then turntables.

I've saved the best statistic and the best EIA spin for last: part of the survey involved asking baby boomers 36–55 years old what their primary music sources were when they were 18 and what they are now. When the boomers were 18, 43% said radio was the primary source, 27% said records, and 26% said tapes.

Now let me quote the next paragraph, for it's too delicious not to serve up whole: "Today, the most popular medium has moved from records to compact discs and cassettes, but the most frequent form of listening is still from the radio. Records, however, have moved from second to last. Among all respondents, 89% listen to the radio, 72% to compact discs, 70% to tapes and only 25% to records." **HELLO????? What's the news here?** That records have moved to last place?

No. The news is that 23% **still listen to records!!!** Twenty-three percent. Let me repeat that: 23% of respondents **still listen to records!!!** I'm surprised the EIA didn't follow that with, "But they'll soon be switching to MiniDisc." So, have "CD players replaced turntables"? No. Too bad none of this information appears in the current EIA reference book.

**THE 23% SOLUTION**
So people are still playing records—probably more people than are playing ladders. Can that 23% find record-cleaning accessories at Tower Records or the other big chains? Rarely. Does Allsop still make its excellent and cheap Orbitrac record-cleaning system? Apparently not. Can that 23% still find records at the stores? For the most part, no.

With 23% still playing records, why can't they find them anymore—even when they're still being pressed? Because there's no demand? No. Because the industry wants to kill records? Despite the constant denials, the answer is clearly yes.

The industry would rather sell CDs because they're smaller, much more profitable, less fragile, and less likely to be returned as defective. But, it's still pressing vinyl because it knows the demand exists—it knows there's money to be made. The dissonance caused by the competing goals of making money and killing records has lead to this bizarre situation: the industry presses records to service the demand, but it doesn't want to encourage its expansion.

How else to explain advertisements for new releases that list catalog numbers for CD and cassette but not LP—even when there is one? Even the publicists at the major labels are kept in the dark about the availability of vinyl.

Consumers who want a vinyl issue of a new release have to first track down its availability, then find a source. It's like buying drugs: they're plentiful and available if you know where to look. No, I take that back: it's easier to score illegal drugs than new records. Aside from a piss-poor selection at my local Tower, if I want to buy vinyl I have to drive to Hoboken or order it by mail and pay an extra three bucks for shipping.

What do you think would happen if, as an experiment, my local Tower—which is in an area populated, I guarantee, by many affluent audiophiles—opened a serious record section? One that stocked all available new vinyl in one place: classical, pop, jazz, rock, dance? Imagine a wall of Living Stereo RCAs, Deccas, EMI's, Mobile Fidelitys, DCCs, References, Analogue Productions, the

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3 A clue to the success, or lack thereof, of MD and DCC is the appearance of the hardware at sell-’em-cheap-to-clear-the-warehouse prices in discount stores and mail-order catalogs. And I, for one, shan’t mourn their disappearance. —JA

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**Stereophile, September 1995**
new Impulse GRP vinyl, the Blue Note Connoisseur series, the Mosaic box sets, the new rock vinyl from Classic, MCA, Warner Bros., Sony, Atlantic, and indie labels like Sub Pop and the others.

It would fill a wall—like the old days. It would make a statement: it's still here, it's cool, come and get it. And what if that Tower took the gold CDs from MoFi, MCA, Sony, Digital Compact Classics, and the others and put them on the same wall with an explanation of what all this high quality was about? And what if (gasp!) that Tower's ads dared mention the full selection of vinyl?

What do you think would happen? I'll tell you what I think. The store would become a mecca for vinyl-lovers—affluent and otherwise—for miles around. And while they were there, they'd pick up some CDs of music unavailable on vinyl. And the curious would be attracted to the wall. Some might pick up a record or two and get into it.

And finally, average consumers would understand why there were two versions of Tommy in the Who section and why one cost three times as much as the other, and maybe they'd then be willing to spend the difference on the gold version.

And what if that Tower put a well-stocked LP-accessory section next to the wall, with rice-paper sleeves, stylus-pressure and -alignment gauges, and LAST products and other vinyl cleaners? I think Tower would make a great deal of money.

What are the odds that Tower president Russ Solomon, who professes to be a vinyl-lover, would go for such an experiment? Not good, I imagine. Nor are the odds good that the folks running HMV or the Virgin Superstores or the other "record store" chains would give it a serious shot. With all of them so busy trying to figure out ways to distinguish their stores from the other guy's, how would any of them find the time?

**ANALOG AT THE CES SPECIALTY AUDIO & HOME THEATER SHOW**

Having just dissed the EIA and Kathy Gornik, I'd be remiss if I didn't say that, without Kathy's hard work and prodding, there wouldn't have been a Summer CES—nor would there have been one if making a profit on the Chicago Show was part of the EIA's agenda. The EIA took a hit, but it scored one at the same time. [See the full report elsewhere in this issue.—Ed.]

I didn't expect to find much new at the CES Specialty Audio & Home Theater show, coming as it did less than two months after Stereophile's, but there were a few interesting new electronics products for record-lovers.

At the entry level, Parasound introduced the PPH Phono Preamp ($11995), which uses Analog Devices op-amps and audiophile-grade capacitors. At more than 10 times the price ($1490), VAC introduced its Model 21.1 six-tube phono amplifier, which offers high gain (65dB), low noise, class-A triode circuitry, and front-panel adjustment of load impedance, capacitance, and gain.

Conrad-Johnson also introduced new tube phono amplification with its Premier Fifteen phono equalization preamplifier ($3995). It's a zero-feedback design that uses a differential amplifier as a low-noise input gain stage, a passive RIAA network, another gain stage, and finally a directly-coupled cathode-follower output. It offers adjustable gain of 40dB, 46dB, and 52dB and can be used with cartridges varying in output from 0.2mV to 5mV.

C-J also introduced a new solid-state phono section at a less lofty price; the EF-1 phono equalization preamplifier offers the same gain capabilities as the Premier Fifteen but at a more affordable $1795.

AudioPrism demoed a prototype all-tube phono section, the Mantissa, which uses 6DJ8 and 12AU7 tubes and offers 60dB of gain. "Target price" is $3700.

N.E.W. announced a new DC-powered, six-tube phono preamp, the DCLP 5 ($2298), which will be shipping in the fall. The last DC-powered phono section I auditioned was the Marcon PPA-1. Anyone out there remember that THUMP! battery-powered headamp?

FM Acoustics was at the Show with its model 122 phono preamplifier ($5000), which is an unbalanced version of the 222.

Turntable brands on display: Kuzma, VPI, Roksan, Basis, Townshend, NAD (parts sourced from Rega), Wilson-Benschen, Denon, and Rega Planar. Conspicuous by its absence was SOTA, which is located in the Chicago area. Also missing were Immedia, Forsell, Rockport, Linn, Well Tempered, Rotel, and Oracle.

Arms on display included the new VPI unipivot, the Graham 1.5, the AudioQuest and Rega series, Wilson-Benesch, Townshend Audio, and Naim. Missing were Souther, ET, Linn, Moch, SME, Wheaton Triplanar, and Airtangent.

The only new cartridge I heard about was from AudioQuest—a replacement
for its highly regarded AQ 7000sxs. The new model, the 7000 Fe5—like the unit it replaces—was designed in conjunction with Scan-Tech. A full review coming up.

**Quote of the Year**

Writing show reports is like announcing ball scores on television: you try to come up with new ways of stringing lists together, and it never escapes the mundane. So rather than leaving you this month on a yawn, let me quote Joe Gastwirt, president of Ocean View Digital Mastering in Los Angeles.

Since Gastwirt’s name has appeared on many, many fine-sounding CD issues and reissues (the recent Hendrix MCA releases, for example), his name should be familiar to all of you. In an article on HDCD® that appeared in the business section of the *New York Times* on June 26th, 1995, Gastwirt is quoted: “With HDCD, for the first time, I’ve heard an advantage to using digital audio.”

Need I say more about the last ten years? Take your turntable for a spin and have a good trip! That’s what I’m about to do.
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WorldRadioHistory
No one doubts that home entertainment in the early 21st century will look and feel completely different from what we might have imagined just 10 years ago. In 1985, the audiophile's ideal was two-channel perfection: the holy trinity of the perfectly matched cartridge/tonearm/turtable; a record cleaner that really worked; a sweet, delicate-sounding preamplifier; a dynamic and authoritative power amplifier; mirror-imaged loudspeakers that shook the earth and sang to the heavens; a nice room in which to enjoy them; and a tolerant spouse. Digital in hi-fi circles was commonly a dirty word, surround-sound evoked embarrassing reminders of the quadraphonic craze, and video was something true audiophiles dismissed as little more than an opiate for the heedless masses.

In 1995, many of us have figured out that two-channel perfection may not be attainable—or, having attained it, discovered that it fails to serve up that last convincing dose of realism. Perfection has proved to be a relative term. Die-hard analog fans now begrudgingly agree that not only are CD's pretty damn good but also their potential is only beginning to be unleashed. And even the snootiest old-school audiophiles will admit they enjoy movies at home. The marriage of audio and video is a fait accompli. Old paradigms are giving way to new ones that change and grow in new, unpredictable directions.

What does the home-entertainment system of the near future look like? How will we use it? How are new developments affecting the direction of the industry? Is the audio hobby as we have known it going the way of the dinosaur? Where will we be in five years? In ten years? Hi-Fi '95, the Stereophile High-End Show held last April in Los Angeles, gave me the opportunity to ask such questions of industry veterans—among them Paul Barton of PSB, Peter Tribeman of Atlantic Technologies, Dennis Had of Cary Audio, Mark Shifter of Audio Alchemy, Jim Croft of Carver, Bob Stuart of Meridian, Gary Shapiro of the Electronic Industries Association, and Stereophile editor John Atkinson.

There's no disputing that Digital Signal Processing, surround-sound, and Home Theater comprise a hard-charging troika pulling us toward the technological horizon. Meridian's seven-channel surround system on display in the Presidential Suite of the Doubletree Hotel was, in my opinion, a stunning example of digital's musical potential. As in previous shows, the Meridian system, although video-compatible, was dedicated to music only. The system's designer, Bob Stuart, spared me a moment between a summit meeting with Pacific Microsonics and a conference with THX.

Surround-sound as presented by a system such as Meridian's confounds the audiophile's assumptions about the proper reproduction of music. What's the most difficult challenge
Critics agree—the Marantz CD-63 Special Edition plays to rave reviews. Marantz CD players have long been held in high esteem and the CD-63SE continues the tradition. Based on the award-winning CD-63 model (European CD Player of the Year—1994-1995), Marantz engineers applied a number of enhancements to the Special Edition version. Both models feature Marantz' exclusive HDAM discrete analog output stage, which provides a superior analog output signal characteristic, compared to conventional op-amp based designs found in most other models.

A host of refinements found in the CD-63SE include oxygen-free copper power transformer windings, selected Cerafine and Silmic audiophile capacitors, chassis and power supply bracing for improved rigidity, and numerous other "tweaks" to bring out the most musicality from your favorite CD’s.

For fans of outboard D/A processors, the ’63 series is equipped with high quality co-axial digital output (along with optical, also), and excels as a transport alone. Built to the highest standard, the Marantz CD-63SE is, of course, backed by our three year limited parts and labor warranty. Audition the Marantz CD-63 Special Edition soon at your Marantz dealer.
BACKWARD-COMPATIBILITY WITH THE PRESENT NTSC TELEVISION FORMAT WILL NOT LIMIT HDTV’S POTENTIAL QUALITY, BECAUSE HDTV WILL BE SCALEABLE AND EXTENSIBLE.
—Gary Shapiro

Bob Stuart faces “Re-educating the public,” he answered. “Hearing stereo is a learned skill—something we have perfected through years of practice. Hearing surround-sound through a very transparent processor and a very-high-resolution system means we must learn to hear in a new way.”

How might the development of high-density storage devices, such as the Digital Video Disc, aid the enhancement of musical realism? Can a system as advanced as Meridian’s be pushed further? Stuart said: “A disc like that, if used for audio only, could have a huge potential. It could carry multiple channels. With a higher-density carrier, we have the potential to go way beyond our present limitations. I think that when more transmission channels become available, we will evolve the kind of recording techniques that can separate information vertically as well as horizontally. More recorded channels will mean more playback channels; but the more speakers you put into a system, the easier the room becomes. More channels will enable us to re-create a more realistic soundfield.”

Gary Shapiro—Vice President of the Consumer Electronics Group of the EIA, and whose job it is to be on top of all new developments in his field—was very enthusiastic about High Definition Television. He expects the FCC to have settled on a standard for HDTV by the end of 1995. Many people have wondered whether backward-compatibility with the present NTSC television format would limit HDTV’s potential quality. “Not at all,” he asserted, “because it will be scaleable and extensible. The NTSC standard has lasted for more than 60 years and has proven to be very flexible. It has been improved upon in various ways, with the addition of color, and later stereo sound. I think HDTV will also be, by definition, quite flexible.”

He foresees HDTV in the stores within two years. As with most new technologies, it will be quite expensive in the beginning; but, according to Shapiro, “for consumers who care about quality, it will be a godsend.” When I asked him about the availability of software, he said: “There’s a tremendous lot of software available right now—the entire film library is suitable for HDTV. It doesn’t take much to transfer films into an HDTV format. Actually, most films are better than HDTV. As to whether sitcoms and game shows will be in HDTV, I don’t think it matters.” Most Stereophile readers won’t disagree with that statement. “But HDTV will be the biggest development affecting the greatest number of consumers in the next 10 years.”

What about audio technology? Testing of digital radio should be completed in the next year or so and a standard recommended to the FCC. “The broadcasters clearly want it,” he stated. “I think most consumers are familiar with CD quality sound and have a desire for it in their cars, which is where most radio listening is done. The question is whether the FCC will have the backbone to also allow a national satellite service.”

One useful new development is an information feature rather than an improvement in performance: Radio Broadcast Data Services. Shapiro explained, “RBDS is intelligent radio—a datastream that will be converted into an alphanumeric display on your radio’s tuner, giving you such information as the name of the song and performer you are hearing, or weather and traffic information.” The greatest value for the music-lover will be knowing who is performing—something too many radio stations have forgotten about.

“DBDS will do other things, too,” he continued, “like turning on your radio if there’s an emergency. By the end of the year, more than 500 radio stations will be using RBDS. Delco, Denon, Philips, Pioneer, and a number of other companies will offer tuners with scrolling text.” Another exciting development is Direct Satellite Systems (DSS). The broadcast is received via a pizza-sized dish antenna that can be placed almost anywhere. With it one can get about 150 channels: sports, music, and movie programming—everything except local broadcasts. “I have one,” Shapiro told me, “and I think it’s terrific. I called my cable company and had their service cut off.”

DSS, also called Direct Broadcast Satellite, is the first real challenge to the cable industry—a consortium of local monopolies. Shapiro said, “This is only the beginning of a wave of big changes if Congress acts as we think they will and allow the telephone companies to start delivering video. We may have the phone companies delivering video and the cable companies offering phone services before long. Another service about to be introduced will allow you to download a movie over the phone directly into your VCR. There’s a tremendous range in the way consumers will receive and use the technology. The main word is, obviously, digital.”

And “digital” is the obvious lead-in to a discussion with Mark Schifer of Audio Alchemy, whose delightfully affordable products such as the DAC-in-the-Box put them at the opposite pole from the cost-no-object crowd. What new magic are they cooking up? “The final frontier is the room,” Shifer said. “We’re working on a very affordable loudspeaker-equalization and room-correction computer—something that corrects for phase, frequency, and amplitude. In the not-too-distant future we will be able to go into a cus-
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tomer’s home, take our measurements, transmit that measure-
ment data back to Audio Alchemy, where we will re-
create the room, make the corrections, transmit the correc-
tions back to a correction computer in the customer’s system, and, on-line, fix the room. That’s where we’re going.”

He expects the first correction computer to sell for around $1500. Audio Alchemy is trying to get Texas Instruments and other suppliers of digital hardware more interested in audio. If they succeed, then, according to Schifter, “we can drive down the cost of the DSP and the retail cost of the box.”

Audio Alchemy’s slogan is “Affordable Digital and Analog Excellence.” On the third day of the Show, Schifter summed it up this way: “I counted nine systems that are more than $100,000. It bothers me as I go from one display to another that everyone—95% of them—is showing systems that are 30, 40, and 50 thousand dollars. By comparison to the most expensive systems, one costing $30,000 is hyped as ‘affordable.’ That’s a new car, a down payment on a house. It’s a lot of money for the average person.

“Our best system, cables and all, is eight grand. That’s a lot of money, too, but by comparison it’s cheap. I’m surprised that other people haven’t gotten hip; if a little company can come out of nowhere and do what we are doing, why shouldn’t they? We have grown from 17 employees 14 months ago to 41 now. In 4½ years we have lost only one employee, who had to move away. We pay good wages, and everything is built onshore—including our cheapest AC adaptor. Our people, from the guys on the shipping dock to our national sales managers, are walking around with smiles on their faces. And it gratifies me that we were nominated for three awards at the Acad-
emy for the Advancement of High-End Audio banquet.”

Paul Barton, of PSB—many of whose products have been well-received by the au-
dophile press—was unequivocal in his conviction that Home Theater is behind the loud-
speaker-maker’s current growth.

“I see this sort of honeymoon—if you want to call it that— which will last a little while.” He wouldn’t speculate about what might come when the honeymoon’s over, but did say, “I think the equipment is improving in the process.”

The digital revolution has made new demands of loud-
speaker designers. “It has made us have to deal with unprece-dented dynamics,” said Barton. “Some of the low frequencies and dynamics of CDs, as well as the capabi-
ties of amplifiers now, have pushed loudspeaker design to new levels. Personally, I would be just as happy with ana-
log if it weren’t for the fact that it tends to be frequency-
limited—not only in the recording process but also in the playback. Digital has allowed me to design loudspeakers with a much lower bottom end than would ever have been possible using a turntable as a source; there is too much difficulty mechanically isolating low-frequency energy. With analog, you are severely limited by having a pickup in the sound-
field. A CD player can also be set in motion by a huge sound-pressure level, but it will mistrack. There’s no halfway point; it either works or it doesn’t. It won’t cause a woofer to oscil-
late. So digital has helped me in that way.”

PSB is based in Ontario. Has the North American Free Trade Agreement had much effect on their business? “It’s been a benefit already,” Barton replied. “In Canada we have federal sales taxes. We used to have to pay our taxes before distribution. Importers would be taxed on the price they paid for what they brought in, but manufacturers were taxed on their selling price. So my marketing costs were taxed. It was very anti-manufacturer for Canada. There was already a free-trade agreement between Canada and the US, but NAFTA revamped everything to make it more favorable to sell prod-
ucts in the States. Previously, the US Customs Act did not differentiate between a speaker driver, such as a tweeter, and a finished enclosure. Their attitude was: a speaker is a speaker is a speaker. Since NAFTA, that has changed.”

Where does Paul Barton think we are headed? “We’re going to be very well-integra-
ted into A/V and multimedia. The integration of multimedia is something that appeals to the masses of customers. I’m not talking about the elite high end of the audio market, who will always maintain their niche. But a lot of audiophiles aren’t rich . . .” Echoing Mark Schifer, Barton added: “The successful loudspeaker com-
pa ny of the future will be one that delivers the most music for the money.”

Another loudspeaker company that understands this is five-year-old Atlantic Technol-
ogy Corporation, whose $1476 Model 250 surround-sound system is apparently selling like hot dogs at a baseball game. ATC is headed by Peter Tribeman, whose credentials include being one of the originators (along with Stereophile contributor Peter W. Mitchell) of the Audio/Pulse Model One ambi-
synthesizer—the first commercial digital-delay system, which was created back in the mid-’70s. Tribeman was a co-founder of NAD and left as Chairman after 13 years. He started Atlantic Technology in his waning days at NAD after a friend showed him a 60W, self-powered, three-piece speaker system. Their sec-
The successful loudspeaker company of the future will be one that delivers the most music for the money.
—Paul Barton

ond product, anticipating the Home Theater movement, was a five-channel surround system using five of those little satellites, a subwoofer, and a miniature Pro Logic decoder, which they designed themselves around the Sanyo LA2770 chip.

Atlantic Technology also believes that affordability is where it's at. They're coming out with a little brother to the 250 system, the Model 220, which will lack the center-channel tone controls of the 250 and have a smaller subwoofer. ATC is betting strongly on multichannel audio. Peter Tribeman believes that, in five years, "It's going to be incredibly difficult to find a two-channel receiver. Basically, it's going to be five channels: Dolby Pro Logic, THX, AC-3, or what have you. The days of two-channel audio are rapidly coming to a close. Eighty percent of the new audio systems sold today are already multichannel. And new and better software is coming along that will be multichannel itself."

Like Bob Stuart, Tribeman feels that the Digital Video Disc has enormous potential as an audio medium. "Toshiba just announced that their dual-layered disc will store nine gigabytes. If that medium is used for audio without pictures, we'll be able to reproduce, with PCM, 20-bit audio sampled at 96kHz. Take the world's most advanced CD transports and D/A converters...what you'll get with the DVD in a couple of years will exceed that."

What about the fate of traditional audio, the LP-and-turntable-based hobby around which many audiophiles built their systems and many companies built their fortunes? Tribeman laughed: "The last place I'd put my money today is into a phono-cartridge company. They are like the makers of buggy whips when the first cars came out. Records as we know them will be of historical interest, an obscure hobbyist type of thing—like antique autos."

Not everyone embraced this view, including Dennis Had, of Cary Audio. Cary is enjoying great success with their single-ended triode amplifiers. As Had put it, "Our business is straight up. He doesn't plan to produce multichannel amplifiers—at least not under the Cary name—or to abandon traditional high-end audio. "I don't buy this argument that the High End is dead, that it's populated by a bunch of old farts who are ready to drop off and take the industry with them." He revealed that Cary owns another company called Audio Electronics Supply, and AES supplies kits for (what else?) single-ended triode amplifiers. With a wide smile, he said: "It's a very high-volume business in itself. The average age of an AES customer is about 22."

"Students?" I wondered.

"Yes. And they're in hot pockets: New York, Cleveland, Seattle, Boston. There are some hotbeds around the country for college students and even high school kids who have gone bonkers over vacuum tubes. They remember their dads or even their grandfathers having vacuum-tube amps, and they want to find out what it's all about."

"Among that age group there seems to be a concurrent interest in reviving the LP," I mentioned. "But maybe they just think it's cool because it's retro."

"Maybe they just think it's something they missed. I think there's no question that this is a progression up from their boom boxes," Had replied assuredly.

Dennis Had expressed some strong opinions about high-end companies venturing into Home Theater in search of the quick buck. "Some small loudspeaker companies are selling their souls running after the surround-sound market when their real opportunity would be to pursue high-end. I don't know if they'll stay in business. I'm putting my chips on high-end audio rather than surround-sound and video. I would hate to compete with the Japanese giants. I've had some incredible successes and one spectacular failure, and one thing I've learned is you don't stand in front of a bulldozer."

Had believes that the retail audio market is ripe for serious entrepreneurs, people who are real retailers, who are fanatics about quality and willing to educate people in their communities about audio and introduce them to high-end, with this caveat: "The day of the hobbyist-run tweak shop—the dealer who is in the business as a hobby—is history. But there's a golden opportunity for the businessman who loves audio and wants to share his passion by elevating people's levels of musical enjoyment."

John Atkinson is also optimistic about the future of high-end audio. "The median age of the Stereophile reader is 39," he said. "That's quite old when you consider that the median age of people who buy music recordings is 30. On the other hand, the median age of our readers has remained at 38–39 for the last 10 years, which means that, as we lose older readers, they're replaced by younger ones in their 30s...If you're talking about people who want to enjoy music with the best possible quality, there have always been such people, and I believe there always will be; in that sense, high-end audio is a stable, slightly growing industry."

Speculating on the difference in listening habits between generations, he said: "Wanting to enjoy high-quality audio could be something associated with baby boomers. We all grew up in the '60s, when music was very important—it was the way we expressed our independence. We take our love of music totally for granted..."

"I don't know if that's true for the Generation Xers and younger," he continued. "Rolling Stone had an article last year on the differences between us baby boomers and Genera-
tion X. We are serial processors. We have longer attention spans, can read a book from beginning to end, listen to an album all the way through, and so forth. MTV and Generation X types are much more parallel in their processing of information. They will have a magazine open with the TV on and a computer running all at once, absorbing information from several sources simultaneously. Where does the high-end audio industry fit into a world that's going to be dominated by this generation if they're like this? I don't know. Is quality audio of any importance when your main sources of intellectual stimulation are your TV and your computer? I don't think anyone knows."

How does Atkinson envision the home-entertainment system of the future? Are we really headed for total integration of all forms of electronic media? Drawing on himself as an example, he said: "I actually have three separate systems. I have my high-end audio system in my dedicated listening room, which for a more normal person would be the den. We have a Home Theater—if you can call it that—in the family room, where we watch movies and the children watch videos. And I have a high-quality audio system hooked up to my computer—for music when I'm working, for sound effects on computer games, and for sound clips on CD-ROM reference works. To combine them all into one system wouldn't work, because they serve different purposes. So is the future going to be integrated? I don't see why it should be, unless you have a centralized intelligence in your house controlling different audio systems in different rooms. Some people are talking about that..."

Of course, John Atkinson is a special case. Not every audiophile would need or could justify a separate high-end audio system and a Home Theater. But what about the future of traditional two-channel stereo?

"The final definition for high-end audio in the future is: do you mean stereo that we've had up to now, or do you mean something more?" Atkinson asked. "Bob Stuart has a very strong conviction that two-channel stereo is in fact a dead end." I reminded him that Dennis Had and others are still very enthusiastic about two-channel stereo.

"I used to think more like Dennis," Atkinson replied. "But I recently tried the Meridian 565 surround-sound processor, which for the first time seems to give you more of an envelopment in the acoustic event of the recording without damaging the fundamental sound quality. Previous surround-sound processors, to me, have always sucked. They give you the surround effect, and, in the process, the music is terminally damaged. The Meridian's the first such processor I've heard..."

"Well, I was playing my own recording of Robert Silverman, from the Stereophile Concert CD, and I changed the 565 from straight stereo to its TriField 5-channel surround mode; the piano stayed where it belonged: up front. Nothing changed other than that the hall acoustic wrapped around me. I found that exciting, because it didn't damage the music but made it more like being there. More like virtual reality. I used to take the hard stereo line, but Bob Stuart has convinced me that, done properly, the cross-fertilization of audio and Home Theater will result in much more satisfying music recordings that will work better at putting you at the event."

What work remains to be done in the quest for greater musical realism? Quite a lot, according to Jim Croft of Carver Corporation, whose recently reviewed Lightstar amplifiers were well-received at the Show. Croft, like Peter Tribeman, is an industry careerist, going back to the 1970s and his days at Audionics of Oregon. He co-designed Carver's Amazing Loudspeaker and is the holder of a number of patents for amplifier and ribbon-loudspeaker technology.

Croft feels strongly that simple two-microphone recording techniques can't capture the live event. "If someone's playing a violin in front of you, you hear one arrival at each ear. If you have a pair of loudspeakers playing a recording of that violin, you have two arrivals at each ear—one from each loudspeaker. That's unnatural. What you really want is just the right speaker going to the right ear and the left speaker going to the left ear. But with speaker systems that doesn't happen."

"There are some things that are fundamentally wrong. There is no standardization of microphone technique. You have no way of knowing which mike technique was used on any particular recording. Even if you were there, just finding what an appropriate playback system is for a known recording is an enormous problem in itself—particularly if you've done anything beyond a simple binaural approach." I suggested that probably the best we can hope for in playback is an approximation of the original event.

"Yes," he assented, "You don't necessarily have to reproduce the soundfield exactly as it was to fool the ear into thinking it is there; but if we could standardize recording techniques, it would be an enormous leap forward. I'm hoping that, as we advance the playback components, the next focus will be back to the recording industry to get a standardized approach. As it is, we are working with one arm, if not both,
DESIGNING A LOUDSPEAKER TO IGNORE THE ROOM THROUGH THE MIDS AND HIGHS SEEMS TO OFFER MORE POTENTIAL FOR CORRECTION IN THAT PART OF THE RANGE THAN IN TRYING TO DO IT DIGITALLY.

—Jim Croft

tied behind our backs.”

“That would make a lot of sense,” I said. “The recording engineer could write a small code that could be buried in the recording to tell the playback gear which microphone technique was used.”

“Which mike technique and the size of the environment,” Croft nodded. “Just knowing those two things would be a really huge advancement. Then we could lock on to those and create playback systems that really do re-create the live event—rather than a facsimile, which is always distorted. Right now, it’s almost a choice of which distortion do you prefer?”

Would such standardization require a closer alignment of the recording and playback industries? “That would be one way of looking at it,” he said. “Another way would be for them to settle on some standards—just a few good ones; then the relationship wouldn’t have to be there at all. We could just lock on to standardized cues with some corresponding steering software.”

Other problems need to be addressed, he explained. “The room/loudspeaker interface is the next stumbling block. More research needs to be done toward getting the loudspeaker to ignore the room. I have some hope for digital room-cancellation techniques as applied to low frequencies for one spot in the room. Another approach is to use multiple subwoofers throughout the room to get an averaging effect, a smoother response. Designing a loudspeaker to ignore the room through the mids and highs seems to offer more potential for correction in that part of the range than in trying to do it digitally. But with unlimited computing power, we can try to correct some fundamental problems in the soundfield.”

Recording techniques and room acoustics aren’t our only remaining problems. Others exist where obvious engineering solutions run into stiff opposition from dealers and customers alike—as with the persistent problem of matching amplifiers and loudspeakers.

“The amplifier/loudspeaker interface is another area where more work is needed,” Croft continued. “Most engineers would agree that powered loudspeakers are the only way to go, but it’s a difficult issue from a marketing standpoint. The dealers can’t fit them into their switching bays, or whatever they use for demonstrating loudspeakers, and customers have a distrust of hidden amplifiers. We have trained them to believe amplifiers must be separate to be good.”

Bob Stuart has made quite a convincing case for powered loudspeakers with the Meridian DSP-6000. Paul Barton agreed in principle about this issue and implied that only market resistance keeps him from introducing a powered loudspeaker. He said he may bring out a compromise design with a powered woofer, and a high-efficiency midrange and tweeter with separate inputs, so customers can use amps of their choosing for that part of the frequency range. Powered loudspeakers make a lot of sense: crossover functions can be done at line level rather than power level, and the amplifier can be optimized for the driver it operates. Speaker wires can be kept very short so that the amp is mated directly to the driver.

Jim Croft agreed. “A lot of problems go away. You can build the amplifier cheaper. It doesn’t have to be this universal thing that has to drive anything you hook up to it. With the Lightstar, we’ve done that—we’ve come up with a technology so that we don’t have to build a $30,000 Krell Standard to achieve universal compatibility in terms of load hookup. But still, you shouldn’t have to do that—it’s overkill. A better way to build an amplifier is to make it more intimate with the loudspeaker. At the moment, speakers and amplifiers are isolated from each other...the loudspeaker designer of the future will also know amplifier design, and the amplifier designer will know loudspeakers. But, like I said, having been involved with this kind of thing before, dealer resistance is really difficult. Dealers want to sell separates and more components.”

Croft was also concerned about making equipment more user-friendly. “The industry is going through another period of feature-itis again, putting 300 buttons on a preamp or receiver where there should be just four or five. The computer industry is way ahead of us in this department. It’s another challenge, getting back to a more intuitive user-interface.”

Like everyone else, Croft acknowledged the impact that high-density carriers like DVD will have; but, taking a long look into the future, he said eventually the industry will have no option but to get away from anything with mechanical moving parts. “Some of the least reliable parts of the playback system are mechanical. Because of that, we will eventually go to straight memory storage and direct digital transmission.”

It seems logical that, as computer memory gets bigger and cheaper, at some point audio will break away from mechanical forms of storage. “We all thought it would happen sooner,” he said.

How are we going to get the music? Through cables and wires or microwave transmissions? In bubble memories or over the phone? On this never-ending subject, Croft said: “We’re just scratching the surface of delivery systems. Nobody knows how they’re going to line up or how we’re going to consolidate them. We can define how we think it’s...
going to look, but we probably won't be the guys who will determine how it will end up. Very few of the companies in this building are of the scale to have any effect on that kind of decision. Audio has always been like that. We're the poor stepchild of the electronics industry. We get the hand-me-downs, the by-products of other industries. Like loudspeaker wires—it took years before we stopped using secondary wires from other industries. Every component you look at—the power transistors we use, the switching power supplies—all came from other industries. Luckily for us, technologies have been developed by others that solved our problems. The compact disc is unique in that it was an audio-driven development. That's quite rare."

These discussions renewed my excitement about what's just around the corner. I came away with more questions than answers, but plenty to ponder. We should expect to see more parallel developments. As Paul Barton said: "With the widespread distribution of technology and shared information, similar developments are occurring simultaneously in various places... With the information highway, this will become ever more prevalent. Patent law is going to become extremely difficult, because you will see patents applied for the same concept in several locations at once. You'll have a hard time keeping your ideas to yourself. Not that these ideas are going on the Internet, but what inspires them is being spread to everybody almost simultaneously."

Mark Schifer's ideal of audio excellence for the common person should be repeated like a mantra by all of us. As for the high-end system of the future, I liked Bob Stuart's vision: "I want to see the speakers disappearing into the walls, the system becoming integrated with the house, and the house with the system."

Perhaps the most telling omen for the future was an event that took place just two weeks after Stereophile's High-End Show. Los Angeles hosted E3, the Electronic Entertainment Exposition—the first trade show devoted to video and computer games—at which such giants as Nintendo, Sega, and Sony, as well as tiny unknowns such as Tao, vied for the attention of cyberpunks and investment bankers alike: over 400 manufacturers hawking their wares to approximately 35,000 enthusiasts.

The newspaper story from which I lifted this tidbit was accompanied by a photo of two intense, nerdy adolescents brandishing large toy weapons. For them, the future is a place where they will race cars and motorcycles at incredible speed without the danger of crashing; slaughter hordes of monstrous enemies without spilling a drop of blood; and have steamy encounters night after night with the babes of their dreams without the risk of contracting a life-threatening illness.

In the audiophile's little corner of the universe, the future is a place where we will enjoy the best seat in the concert hall or movie theater whenever we want. Doesn't that sound like the better part of the deal?
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Gold limited edition CD=CAPG 013 $30

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Of the CES Specialty Audio & Home Theater show, referred to by all and sundry as the “CES,” it must be said—paraphrasing Spencer Tracy: there wasn’t much there, but what there was, was choice. It did seem a small Show—especially when compared to the Winter Consumer Electronics Show extravaganza held annually in Vegas.

But that was precisely the point. This Show was designed to feature only specialty audio and video—no Nintendo, no radar detectors, no mini-systems or boom boxes. It was specifically intended as a declaration that not all electronics manufacturers have the same goals: this year’s Chicago Show began, in fact, as a protest over lumping specialty audio/video in with the Interactive Electronics Show originally slated (but later canceled) for Philadelphia this summer.

Although there was a certain sentimental attachment to the Chicago venue, what motivated the majority of the 1995 Summer CES participants was the suspicion that bizarre couplings, such as interactive computing and high-end audio, indicated indifference—or ignorance—on the part of the EIA/CEG (the group that sponsors these Shows).

Having been to the Vegas Show in January, and having just come back from Stereophile’s fabulously successful High-End Hi-Fi Show in Los Angeles, I was at first disoriented by the absence of crowds clogging the halls. The map of exhibitors revealed one reason for the sanity prevailing in the corridors: spread over six floors of the Palmer House and spaced widely apart, the Show rooms weren’t stacked atop one another, as they had been at the other two events. Maybe this is only possible at a modest Show, but I must confess that it made for a welcome change.

I was also initially baffled by the reports from vendors that the Show was busy—one of the busiest ever, reported Conrad-Johnson’s Lew Johnson. Oh, really? I thought, surveying the spacious halls and calm exhibition rooms. “An interesting Show,” Michael Zeugin of Audio Influx proclaimed, while “The Show was a success,” Kathy Gornik of Thiel asserted. “Like the last Chicago Show, this one was more beneficial than you would ever guess just looking at turnout numbers,” was Alón’s Carl Marchisotto’s assessment.

And that, really, is why the exhibitors’ impressions of the Show could be at such variance with what I was seeing. Trade shows have different priorities than do shows where con-

1 With apologies to Oliver Wendell Holmes, who wrote in Welcome to the Chicago Commercial Club: “Chicago sounds rough to the maker of verse / One comfort we have—Cincinnati sounds worse.” —WP
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Off to Chicago! Getting there was the hardest part. Checking on to the plane was routine, but the family next to me should have had hazard cones around them—at least then I would have had an inkling of things to come. I think that "terror at 30,000'" is a fair depiction of what it's like to be inches from a baby-diaper change on a bumpy flight. The infant, propped up for the procedure by his mom and dad, never once lost his smile or his nerve.

I wish I could say the same for my nervous system, which sustained another direct hit by an agonizingly slow cab ride from O'Hare Airport to downtown Chicago. At last I was ensconced in the air-conditioned splendor of the Palmer House Hilton. That's where the fun began.

My assignment was tubes, and that pleased Toobman no end as I set out in search of things that glow in the dark. Because of the small number of exhibitors, I was able to spend quality time with many more manufacturers than would have been possible within the confines of a much larger show.

It didn't take me long to realize that a major industry trend is affordable tube gear. Forget $5k and $10k amps and pre-amps. Major players as well as newcomers were focusing their attentions on the $1-$2k price range. Besides the obvious motivation of reaching a much wider cross-section of audiophile pocketbooks, this trend also unfolds the prospect of enticing a whole new generation toward tube sound. If tubes are to survive well into the 21st century, the young adults (eg, college students) of today need to make tubes part of their lives. For this to be financially feasible, tube gear ought to be no more expensive than a decent personal computer—around $1000-$1500.

That's exactly the price range Sonic Frontiers is targeting with its new Anthem line of value-oriented tube products. The first two Anthem products on display were the Integrated-1 ($1200) and the Pre-1 ($1495), the former delivering 30Wpc from a quartet of EL84 beam-power tubes—in my experience, capable of exceedingly sweet sound—operated in an Ultralinear output stage. The Integrated-1's line stage provides 24dB of gain, while an optional all-tube MM phono stage (36dB of gain) is available for $200. The unit can be used separately as both a line-stage preamp and a power amp via "Pre Out" and "Amp In" RCA jacks.

The Anthem Pre-1 is a two-chassis affair (outboard power supply) incorporating both line and phono stages. Both MM and high-output (0.4mV) MC cartridges are accommodated. I did get to hear the Pre-1 in action, coupled to a Sonic Frontiers SFS-80 power amp, driving Audio Artistry Valispro loudspeakers: liquid textures, inviting three-dimensional soundstage, with plenty of delicate detail.

Valve Amplification Company's Kevin Hayes proudly showed off his new, more affordable 20 Series products. He directed my gaze toward a stack of components, all adorned with high-gloss black faceplates with gold-plated accents. These sensual, nymph-like beauties got my attention in a big way. If you thought that inexpensive equipment had to look industrial, take a close look at the 20 Series: a paradigm of how to maximize visual impact on a budget. The Model 20.1 ($1390) Line Stage, patterned after VAC's flagship CPA-1 Mk.II, uses a pair of triodes in the signal path, and can be operated in a conventional active-gain mode or in a buffered mode using a single class-A triode as a cable driver.

For the vinylphile in all of us, VAC's Model 21.1 Phono Amplifier ($1490), said to possess an extremely low noise floor, affords considerable versatility. Its complement of six triodes dishes adjustable gain of up to 65dB, which, in conjunction with the Line Stage, should suit even low-output MC cartridges. And front-panel adjustment of both capacitive and resistive loading makes it easy to optimize the performance of almost any cartridge.

The other members of VAC's Series 20 are the Model 22.1 ($1890) and Model 22.2 ($1590) HDCD® D/A converters and the Model 23.1 ($1650) CD Drive. Also new from VAC is the PA35/35 Triode Amplifier ($2950), a basic stereo amplifier similar in appearance to the PA80/80 and incorporating Renaissance-style input and driver circuitry.

The Chinese are coming! If you are heartened by the prospects of seeing tube gear in the vicinity of $1200, then you'll positively flip over JoLida's line of stereo integrated amps, which cost from $650 to $950. The three integrated amps in the series are similar in appearance, are built in Korea and/or China, and are imported by JoLida, Inc. All models use an Ultralinear, class-AB output stage with low feedback and high-quality output transformers that incorporate a German grain-oriented silicon-steel core. A total of four line-level inputs are provided, selectable from the front panel, which also contains two Alps volume pots.

The JoLida line's bandwidth, distortion, and damping factor specifications are excellent. The Model SJ 202A (less than $650 retail) is rated at 30Wpc into 8 ohms and uses a pair of EL34 power pentodes per channel. The Model SJ 302A ($835) also uses EL34s but substitutes a 6DJ8-based input stage for the venerable 12AX7A. Its power output is rated at 50Wpc into 8 ohms. If you prefer the sound of a KT88, the Model SJ 502A ($935) delivers 60Wpc into 8 ohms from a pair of Chinese KT88s. Now that's a price revolution from the perspective of the common man.

A surprise awaited me in the Harmonic Precision/Audio Machine & Design room, in which the system consisted...
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Jack English, Stereophile,
Vol. 15, No. 7 (July, 1992)

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As I see it, the Calisto/io combo from Aesthetix represents a definite threat to the current preamplification status quo.

of Harmonic Precision's Echelon loudspeaker ($1995/pair), AM&D's Linear Research all-tube preamp ($2595), AM&D's Linear Research M-75 monoblock power amps ($2495/pair), and a Timbre Technology DAC. The end result was a sonic presentation rivaling systems costing five times as much. But what really bowled me over was the three-way Echelon's level of harmonic precision in the upper midrange (around 2-4kHz), which was astounding accurate and felicitous to soprano voice.

From the home of Mesa/Boogie guitar amps comes Mesa Engineering's Baron stereo amplifier, which I finally heard in its final production version. I can't wait to get my hands on this amp. The Baron, the brain child of Mesa's Randall Smith, represents the culmination of 25 years of accumulated experience in designing and crafting vacuum-tube equipment. Driving the Platinum Audio Reference-1s, the Baron coaxed a remarkable level of clarity and harmonic purity from these speakers.

I got my first glimpse of the French Audio Sculpture/Audio Matiere amps that Markus Sauer raved about in his report last December on the 1994 Frankfurt High-End Show (Vol.17 No.12). These innovative designs from the mind of Jean-Jacques van Leeuwen are now available in the US through Marigo Audio Lab. Unfortunately, I missed my chance to converse with Jean-Jacques; but one of his creations, the 30W stereo integrated Majuscule ($5375) amp, should come knocking on my door soon.

Nirvana Electronic Works, or N.E.W. for short, is putting DC back into tube circuits. N.E.W.'s Mitch Friedman has produced a duo of DC-based tube products. The DCP-33 ($2298) triode-based preamplifier in particular strikes me as a wonderful concept. Harking back to the golden age of tubes, when batteries were used to provide both grid and plate voltages, Mitch uses a "DC Power Docking Base" as a power source. This unit has no AC-line problems: two Gel Cells provide pure DC voltage. 100% DC operation, and proud of it.

Some of the best sound at the Show was to be found in the Musical Surroundings room—I logged more listening time here than anywhere else—where a Rowland Research Model 2 power amp was driving Harbeth Compact 7 loudspeakers. The front end was sheer analog heaven: a Basis Ovation 'table and a Graham Engineering Model 1.5t tonearm outfitted with a Benz MC cartridge. Mr. Musical Surroundings, Garth Leerer, was especially proud of the new additions to his family: the Aesthetix Callisto line stage ($8k) and lo phono stage ($5k)—both all-tube designs. The Callisto accepts both balanced (XLR) and unbalanced (RCA) inputs and outputs. A unique feature is its ability to internally balance a single-ended source. The lo combines an exceptionally low noise floor with flexible gain and cartridge-loading provisions. Aesthetix designer Jim White apparently has an extensive background in the High End, having worked with Theta Digital in both production and design. As I see it, the Calisto/io combo represents a definite threat to the current preamplification status quo.

I chatted at length with Conrad-Johnson's Lew Johnson about their new tube products. I guess I'm showing my age when I tell you that the last C-J preamp I lived with (and fell in love with) was the Premier Two. (The Premier model count is now well into the teens.) The Premier Fourteen remote-controlled line-stage preamp ($3995), the Premier Ten's replacement, features remote control of all functions, including level control. Volume control is achieved by microprocessor-controlled selection of discrete resistors, allowing level and balance adjustment in one-hundred 0.06dB steps. The audio signal path consists of a single triode gain-stage direct-coupled to a cathode-follower stage to buffer the output. There's zero loop negative feedback, and separate voltage regulation is used for each channel.

The Fourteen's stable mate is the Model Fifteen phono preamplifier ($3995), which is built to the same exacting quality standards. The Premier Fifteen offers gain settings for 40, 46, and 52dB of gain and is designed to handle phono cartridges ranging in output from 0.2mV to 5mV. The signal path uses a differential gain stage connected to a passive RIAA network, followed by a second gain stage and a direct-coupled cathode follower buffer stage.

Also new was the Premier Eight XS triode amplifier ($7995 each), which is a special version of the Premier Eight originally designed for export markets. The XS monoblocks pack quite a wallop: 140W from four pairs of EL34s connected for triode operation. Both Premier Eights and Premier 8As can be updated to the XS model. Contact your C-J dealer for details.

Several of VTL's pure-tube products were on display. I continue to be impressed with Luke Manley's commitment to value. Arguably, the 100W MB-100 monoblocks ($2990/pair) represent one of the best deals going in high-end audio.

My close encounter with AudioPrism's Debut stereo power amp, which I first saw at last Winter's CES, was just as memorable. Then, as now, the Debut struck me as an exceptional value at $1795, with the sort of value-added design detail (eg. EMI and RFI power-line filtering with QuietLine technology) that AudioPrism is well-known for.

Made in England and bearing a French name, Matisse's monoblock power amp ($12,500/pair) is without a doubt fine art. Its level of articulation (polished-silver finish with rose-gold legend and printing) is quite remarkable in what is, after all, a commercial product. If I'm ever lucky enough to get a pair of these artistic creations into my listening room, I may be satisfied just to stare at them with the power off. However, there's good reason to fire them up. They represent the fruit of three years of R&D effort. Two matched pairs of 6550B beam power-tubes are driven by a pair of 6SN7GT dual-triodes. An easy biasing scheme is provided, and the

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feedback is variable and adjustable from the front panel over the range from 0 to 15dB to allow optimization of speaker damping. US distribution is by Brian Tucker's Pro Audio Limited.

The prototypical "Big Mojo," as Counterpoint's Mike Elliott has nicknamed his upcoming preamp, was spread out in true breadboard fashion on a large sheet of MDF. The thing looked like a Klingon vessel torn open by a photon torpedo. At first I didn't know whether to cry or laugh. But Mike's "science project" turned out to be a cost-no-object effort to redefine the state of the art in pure-tube, balanced, line-stage design. Mike says he viewed every part of the circuit with distrust and threw away all of his preconceived notions about whether some bit of circuitry miles away could affect the sound.

In the process he discovered places in the associated circuitry that he would have sworn would have no effect on the sound—yet did. In the end, every preconceived notion he had about "tube sound" went overboard as well. The primary signal path is fairly simple and uses a single 6922 dual-triode as a differential amplifier and a pair of output driver tubes connected in totem-pole fashion à la OTL power amps. Most of this unit's tonnage resides in the power supplies. The final unit will be housed in three chassis—two of which will be outboard power supplies, each as big as a power amplifier. Actual product should be ready to ship in the fall of 1995. I suspect a projected retail price around $10,000 (though I bet Counterpoint won't know until actual production commences.)

The Melos room didn't have anything new, other than the "Photentiometer"-equipped, remote-control SHA Gold pre-amp/headphone amplifier; but I nevertheless spent time listening and chatting (about music, of all things) with Melos's George Bischoff. The sound here was certainly excellent. A pair of Avalon Radian HCs plus all Melos electronics combined to produce a glowing soundstage with the sort of tonal balance I thrive on.

I was disappointed by the paucity of single-ended triode power amps at the Show. The only SE-certified room was that of Cary Audio Design. No surprise here, as Cary's Dennis Had (bless his heart) has long supported this technology. The Cary 805s, driving a pair of ProAc's new Model Response 2.5 speakers, were holding court in impressive fashion, fleshing out a fantastically palpable soundstage. This was my vote for Best Sound at the Show.

As the Show drew to a close, I was left with the warm, tube-like conviction that the tube arena is now as commercially vibrant as I've ever seen it. The clincher for me was a visit to LAMM Audio Lab's room, where designer Vladimir Shushurin showed off his solid-state Model L1 line-level. Yet even here, in what was seemingly a solid-state, class-A, MOSFET bastion, a single vacuum-tube, high-voltage regulator stood tall amid the forest of silicon devices. Long live the tube!

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By Tom Miller
Reprinted from THE AUDIO ADVENTURE

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Congratulations to Audio Research for having the courage to uphold their tradition and stick to their guns. It’s paid off with a unique surround processor that redefines the fidelity standard for music lovers interested in surround sound.”

By J. Peter Moncrieff
Reprinted from IAR HOTLINE! 68-70
December 1994

"For those of us who have succumbed to the enticements of surround-sound for music. Audio Research's SDP1 is... cause for rejoicing because someone has finally done music surround right...

Audio Research is, to my knowledge, the first company to offer completely distortionless stereo channels in a surround decoder...

I wasn’t surprised to find the SDP1 the best-sounding surround decoder I’ve ever heard—or, rather, not heard... I could hear no "sound" from the decoder whatsoever... I guarantee you won't find another surround decoder that has any less effect on the front channels than this one...

If you have any misgivings about getting into surround-sound for your music listening, the Audio Research SDP1 should dispel them. It passes the all-important front channels completely unscathed, it does as good a job as any decoder can with the surround channels…”

By J. Gordon Holt
Reprinted from STEREOPHILE
Vol. 18, No. 8, August 1995

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Michael Fremer on the Solid-State Prostate Shootout

For the first time ever, the Summer Consumer Electronics Show shared a venue with the "Chicago Prostate Shootout." Day One, no one knew exactly what that was; but when I yelled "Duck!" in a crowded hallway, audiophiles dropped to the floor Sarajevo-style.

By Day Two we'd found out that the "Chicago Prostate Shootout" was a convention of urologists. So if you've ever wondered whether the doctors who deal with your personal plumbing make jokes behind your back (literally!), now you know.

Speaking of jokes, for those high-end manufacturers who stayed away from this odd little Show fearing it would be a bust, the joke's on you. I've never heard so many positive comments from participants. While the size of the crowd wasn't overwhelming, all with whom I spoke were impressed with its quality. Much business was conducted—especially with overseas buyers. Not surprising, given the weakness of the dollar. Neiman-Marcus goods at K-Mart prices.

Ironically, dwindling interest in Summer CES had initially caused its cancellation this year—at least the big, McCormick Convention Center-style Show. Only through the zcal- ouous intervention of some high-end manufacturers did the EIA agree to run a Show this summer. It was small: the whole shebang fit comfortably in the Palmer House Hilton—a venerable, old-fashioned, and exceedingly elegant Loop lodge.

Billed as the "CES Specialty Audio & Home Theater," the twin fare both soothed and exhilarated the collective between two-channel- and multichannel-sound enthusiasts—starting with the seminars. Of the nine scheduled, six dealt with Home Theater, two were about general marketing and promotion, and only one, which I moderated, focused on the future of two-channel audio. But most of the time at the last, "The Future of Two-Channel Audio: Will the 'Woo' Survive?" was spent dealing with multichannel sound.

Of many seminars I've chaired at CES, this was the most fascinating and worthwhile. Panelists John Atkinson, Tony Cordesman (Audio), Frank Doris (The Absolute Sound), Dennis Had (Cary Audio Design), and Tom Miller (The Audio Adventure) brought a great deal of insight to the table, spicing the give-and-take with a healthy dose of contentiousness. Dry subject, lotsa laughs.

A well-reasoned set of future possibilities emerged, which you can discover for yourself by ordering the $9 tape from EIA/CES: (800) 369-5718; California residents call (805) 295-0504.

By far the most bizarre seminar was conducted by former Stereophile Contributing Editor Corey Greenberg, who dispensed with his original panel and went solo with a program that included a reading of his next column in Home Theater Technology, entitled (as best as I can recall) "Get Into Home Theater or Get In the F**kin' Coffin." "They'll probably censor 'coffin,' " he quipped.

In Corey's new world, any high-end company that doesn't embrace Home Theater is a "dinosaur" that will be out of business within two years. Following the reading, Greenberg indulged himself in a long, rambling monologue in which he basically begged the audience to agree with his thesis that high-end audio not tethered to a television screen is basically dead.

Greenberg seemed more interested in pitting audiophiles against videophiles than in promoting the high-end video experience. Send for the tape of Corey's "seminar" and listen for yourself.

I guess Marantz doesn't believe two-channel audio will be dead in two years: the company, which manufactures plenty of Home Theater gear, introduced some very expensive and quite gorgeous-looking DC-powered two-channel electronics. The SC-5 Reference Series preamplifier is fully balanced, uses a resistive-ladder-type active volume control, and 10 HDAM (High Density Discrete Amplifier) blocks—with no ICs in the signal path. Construction is based on a nonferrous aluminum case with copper-plated die-cast alloy chassis.

The SC-5 is remote-powered by the BB-5 Reference Series rechargeable DC power supply, which stores enough energy to power the SC-5 for many hours of listening and is rechargeable in a few hours. When the battery is almost drained (not likely under most circumstances), the unit automatically switches to AC operation. The SC-5/BB-5 combo will retail for $8000.

The companion high-current SM-5 amplifier, conservatively rated at 100Wpc into 8 ohms (200Wpc into 4 ohms), is bridgeable at the flip of a switch to 400W into 8 ohms (500W into 4 ohms) of monoblock power. The SM-5's input and driver stages are DC-powered by the same BB-5 DC unit, while the output stages get their juice from the wall.

Jeff Rowland, a pioneer in DC-powered amps, demonstrated his gleaming Model 6 monoblocks, which can be either AC- or DC-powered. Using a Rowland preamp, Wadia digital, and Paragon Jubilee loudspeakers sitting on JEM subwoofers, the system managed fine sound—which was even more impressive, given how bad most of the systems sounded at this Show.

Components and whole systems that usually sound wonderful even under show conditions were polluting the air with bright, edgy highs and whompy, out-of-control bass—surprising, given the large rooms and plaster walls. Many exhibitors blamed the Palmer House's tartan wiring and 100V juice for their sonic problems, but I was surprised to see how many stood by and said nothing while their rooms...
How To Upgrade Your Audio System to Wireless Remote Control For Just $119

The award winning Chase Technologies RLC-1 Remote Line Controller adds remote control to your classic, older audio components or your powered sub-woofer.

By Bob Rapport

I bought my stereo system back in the early 1980's before wireless remote control was offered as a feature in high quality audio systems. I'd saved up for a couple of years to buy the best sounding separate components available, and even today, it still sounds better than most of the new equipment available on the market.

Over the years, I have always had to get up to change the volume and input selection on my stereo. While that quickly became frustrating, I just didn't have the money to replace my existing system with something comparable, just to get remote control. A lot of my friends own classic stereo components from Mcintosh, Marantz, Dynaco and Adcom. Those systems still sound great, but they do not have remote control either.

The RLC-1 connects into your stereo receiver or preamp at the tape input, instantly giving you remote control over the audio functions such as mute, volume level, and balance. Plus, the RLC-1 has four line-level inputs, so you can plug in virtually any source: TV, cassette deck, Laserdisc player, CD player, computer, VCR, portable cassette player, or even your cable box. Now you can switch between sources without making a trip to your stereo. You can even raise and lower bass and treble because the RLC-1 has its own tone controls, and can turn the whole system on and off with the touch of a button. The multi-function LED array tells you the volume level, what function is on, if the balance is centered, and if the bass and treble are up, down or flat. You still have access to the phone and tuner section of your existing receiver, and full tape monitoring and recording from any source. The RLC-1 can even serve as a stand alone preamp with 105 dB S/N ratio and .05% THD.

The critics love it!

The RLC-1 is very unlikely to introduce any audible artifacts into any Hi Fi system,...and it will extract a lot more versatility from your older components.*

Stereo Review, Mar '95

Eliminates the constant up-and-down required in tweaking your system's balances in every direction,...I'd be curious to ask the designer of my $3500 reference preamp how chase can give us decent tone controls plus remote control for just $119 when he wasn't able to include either in his perfectionist component?*

John Sunier
Audiophile Audition, June '95

The problem

I have always had to get up to change the volume and input selection on my stereo. While that quickly became frustrating, I just didn't have the money to replace my existing system with something comparable, just to get remote control. A lot of my friends own classic stereo components from Mcintosh, Marantz, Dynaco and Adcom. Those systems still sound great, but they do not have remote control either.

The solution

From 1968 to 1985, about 40 million stereo systems were sold in the USA. About 35 million of those systems did not come with remote control and of those, more than 30 million are in use today. This is a true testimonial to the quality craftsmanship of those components built before all the gimmicky features started to appear in the late 1980's.

If you are one of the millions of people who love their older, classic systems, a new product manufactured by Chase Technologies called the Remote Line Controller is the perfect solution. The RLC-1 lets you add the convenience of remote control, save a lot of money and retain the high-quality sound your existing stereo systems offers.

We watch a lot of movies at our house, so I was really interested in the RLC-1 for controlling the volume of those movies. It seems that when I get the volume level just right, an intense scene follows, and it gets too loud. Then a quiet scene follows and I can't hear the voices. I really needed the RLC-1 so I could make adjustments to the volume while the movie played, without the hassle of getting up and down to do it. Owners of powered sub-woofers take note: now you can adjust the output of your sub-woofer from your listening position, and turn it off at night by remote control.

Want a low priced line controller? It's the RLC-1 Remote Line Controller, $88. It's a great line controller for customers who don't need remote control.

At the 1994 Summer Consumer Electronics show in Chicago, the RLC-1 won the Design and Engineering Award for being one of the best and most innovative new products of 1994. This design is a breakthrough for it's ease of use, affordability and outstanding performance.

**Please refer to key code TTP 311 when ordering.**

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**$8 S&H**

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belched and coughed up musical phlegm.

Clear throats prevailed in another DC-driven room, fitted with N.E.W. electronics and Diapason loudspeakers. N.E.W., who manufactures both solid-state and tubed class-A, DC-powered gear, introduced its solid-state, DC-powered, 80Wpc (into 8 ohms), class-A DCA 66 amp, which sells for $2998 including the DCB battery supply/isolation platform.

Conrad-Johnson, Krell, and Spectral also avoided AC woes—not with DC power, but by presenting static displays of their products. **Conrad-Johnson** introduced the MF 2300A ($2995), a revised version of its low-feedback 240Wpc MOSFET amp, which features both circuit and parts upgrades designed to extend bandwidth and make the amp faster and more responsive. Dick Olsher reports on the new C-J tube gear; **Krell’s** new KRC-3 remote-controlled line-stage preamp will be in production by the time you read this: the $2950 unit features over 300 steps of attenuation using a 16-bit control system and discrete resistors, and performs all gain functions in the current mode of operation.

Krell claims the KRC-3 is very fast—it will pass an 80kHz squarewave without pain, according to Steve Portocarrero, Krell’s US sales manager. According to me, this unit looks like an incredible value, built as it appears to be to Krell’s usual high standards. The KRC-3’s gain and power-supply regulation stages operate in high-bias class-A mode; all switching is accomplished digitally, via relays outside of the signal path; and the circuitry is fully complementary, discrete, and direct-coupled—no capacitors are in the circuit anywhere.

Krell’s recently introduced KAV-500 multichannel audio/Home Theater amp was also available for fondling. The chassis features rear slots that will accept two ($3000) to five ($4500) 100W plug-in modules, pairs of which can be bridged for 400W of monaural power. A 1k toroid juices the whole thing. I mention this, and Krell’s outrageous-looking but still-in-the-design-stage KAV CSC Cinema System Controller, lest you think this company is going to follow the Greenberg Prediction and disappear in two years.

**Spectral’s** static display included a Series 2 version of its highly regarded DMC-20 preamp. Changes include new choices of semiconductors, a new line section, a servo-operated phono section, and level trim pots, which are now switchable out of the circuit. All input selection is via relays, and the neat curves in the wiring to and from the main board are hand-done by the fastidious Rick Fryer. The new DMC-20 costs $6000 stripped. Add the phono board and balanced circuitry, and the price rises to $7500.

Okay, you’re gasping for financial air here, so let’s bring things back to pocket change: how about one of the best-sounding systems at the Show for under $750? I’m talking about NAD’s new Model 310 integrated amplifier—which the company is comparing to its legendary 3020 (and why not?)—the new NAD 510 CD player, and a pair of Kef Coda 8 loudspeakers. Total cost: $730. It sounded surprisingly robust and full-bodied, with just a hint of oak, cinnamon, and apple-like overtones. Too bad the 310 doesn’t feature preamp outs. Nonetheless, this bargain package creams any and all “mini systems” I’ve heard.

Peter Bohacek, **Ayre Acoustics’** director of marketing, took me up to his hotel room for a sneak peak at the company’s upcoming K-3 remote-control preamplifier, the inside of which looks like no other I’ve ever seen. The active circuitry is based on the company’s highly regarded V-3 amp. The K-3 is a true-balanced, no-feedback design with the shortest signal path I’ve ever seen from inputs to output. All of the active circuitry is on a vertical printed circuit board mounted flush with the back panel. Four stepped attenuators (positive and negative for each channel) mounted on the board track together via a single volume knob and an ingenious belt-drive system. An optional phono section is planned. Though the striking-looking version I saw was a rough prototype, it was obvious that a great deal of original thought went into the conception and execution of the unit, which is expected to be available sometime in the fall and sell for around $3500.

**Parasound** introduced two new John Curl-designed high-current amps: the 100W HCA-3001 pure-class-A monoblock ($1695), and the HCA-2003 ($1595), a three-channel, THX-certified unit that boasts more than 185Wpc, all channels driven. Curl also designed a new line-drive preamp for Parasound, the PLD-2000 ($1495), which features all-discrete circuitry, balanced inputs and outputs, and full remote control—including an Alps motorized volume control.

While there’s plenty of room in most American households for large, powerful amplifiers like Polyfusion’s 200Wpc, DC-coupled, MOSFET-output Model 960 ($4500), which was introduced at the Show, smaller European homes have tighter space requirements, which are reflected in more compact designs from overseas. The Danish **Densen** DM-10 is a compact, simple—though elegant-looking 75Wpc integrated amplifier with extremely wideband (2Hz–40kHz) performance and zero feedback. At $2500, it’s not inexpensive, but a look inside revealed high-quality parts and some
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MODEL: DMA
innovative engineering—including using the entire chassis as the heatsink. The optional MC 250 phono board ($150) is solar-powered. Listening in the dark isn't a problem: an internally mounted LED is sufficient to power up the board. Densen also showed their 60Wpc B-100 integrated unit ($1249).

Quad's 85Wpc Model 77 integrated amplifier ($1295) is another compact design that, with its rear multipin connector, becomes part of an extremely versatile, fully remote-control system. The 77's flexibility will allow for multichannel audio/video applications when used in conjunction with the series 77 tuner and CD player, which connect via “Quad link” couplers. All series 77 units are controllable via the series 77 handset.

Other British-based companies displaying compact, high-performance systems included Rega, with the 125Wpc EXS stereo amp ($1099) and 125W EXON monoblock (also $1099), and the Essex remote passive preamp complete with MC and MM phono sections ($1699). While Naim didn't offer anything new in two channels, they did demonstrate Home Theater, thus ensuring that they, too, will survive another two years (whew!).

Quebec-based Simaudio, Ltd. showed a complete line of nicely rendered, reasonably priced, compact solid-state Celeste products, including the HT2 60Wpc amp ($1195) and the P4002 preamp ($1595). McCormack showed the new Micro Drive 4—a compact, 4x50W multichannel amplifier that's bridgeable to three channels, offering 150W for the center channel and 2x50W for the surrounds.

Finally, for sheer tactile sensuality, visual excitement, and sticker shock, few products match Sutherland Engineering's instrument-grade A-1000 200Wpc/400Wpc (8 ohms/4 ohms) monoblocks ($18,000/pair), C-1001 true dual-mono preamp ($9500), and C-1000 balanced preamp ($15,000). No amount of ink I might spill would do justice to the physical beauty and smooth, cool touch of these rock-solid, machined-aluminum beauties, which look like something NASA or Klaatu might have produced. Not even these products, however, were immune from whatever was polluting the sound at the Palmer House. Driving a pair of Wilson Watt/Puppies and subs, even the mighty Sutherlands succumbed to the edgy top end and warm, sloppy bottom that plagued most everyone else at the Show tethered to AC power.

My final take on this Show: there's nothing wrong with high-end audio that some good public relations and image-building can't fix—great products in every price category abound. When Eddie Vedder has done more to promote vinyl than everyone else in the industry combined, something is wrong.

People in all economic strata will continue to demand quality in their lives—in cars, watches, shoes, and music reproduction. The problem with the High End is—in mainstream American life, at least—it's still basically an invisible commodity. It's one thing to not be able to afford fine audio gear; it's another thing to not aspire to it because you don't even know it exists. Make it known and make it "cool," and there's nowhere to go but up.

—Michael Fremer

THERE'S NOTHING WRONG WITH HIGH-END AUDIO THAT SOME GOOD PUBLIC RELATIONS AND IMAGE-BUILDING CAN'T FIX.
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The CS7’s Coherent Source* design incorporates several distinctive features:

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- The 12 inch woofer uses a very heavy 10 pound magnet and a short coil/long gap motor system with stabilizing copper rings for exceptionally clean, high output bass performance extending to 23Hz.

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ultimate performance loudspeakers
Robert Harley on digital

The CES Specialty Audio & Home Theater show provided a venue for high-end manufacturers to show their products without the distractions of car audio, watches, and the commodity mentality of a full Consumer Electronics Show. This Show was an unusual mix of high-end audio and Home Theater—a pairing that accurately reflects the direction of the marketplace. This smaller, more specialized Show created a focus lacking from a traditional Summer CES.

The SAHT Show saw the launch of several important new digital technologies and products. The most important introduction was Snell Acoustics' announcement of the availability of their long-awaited DSP-based loudspeaker and room-correction system. Snell has been showing the technology for several years as a work in progress.²

The Snell RCS 1000 Digital Room Correction System processes a signal in the digital domain to correct for loudspeaker and listening-room response variations. Specifically, the RCS 1000 can flatten the loudspeaker system's in-room frequency and phase responses. The six-channel RCS 1000 will work with a two-loudspeaker system or a full Home Theater setup. Inputs and outputs are all analog, so you won't be able to use your favorite D/A with the RCS 1000.

The suggested retail price is an amazingly low $8995. Snell reportedly ate the vast development cost and priced the RCS 1000 according to its manufacturing cost. The unit was originally scheduled to sell for $17,999. Tom Norton is working on a full review of this potentially revolutionary technology.

Although not officially exhibiting at the Show, Meridian Audio gave me a preview of their 518 Digital Audio Processor. The 518 is a consumer version of their professional 618 Mastering Processor, used primarily to convert professional 20-bit masters to 16-bit format for CD release. In a home playback system, the 518 fits between your digital sources and D/A converter.

Operating entirely in the digital domain, the 518 performs three distinct functions. First, the unit is a jitter-reduction box using a dual-PLL circuit. Second, the 518's DSP volume control lets you remove your analog preamplifier from the signal path: the volume is adjusted in the digital domain before it is passed to your D/A converter. Third, the 518 provides what Meridian calls "resolution enhancement" by matching the source's output word length to the resolution of your D/A converter. For example, the 16-bit word length from a CD could be increased to 20 bits with noise-shaped dither to get the best performance from your DACs. Eight different dithers are provided, and the 518 will convert from any input word length to any output word length (between 16-bit and 24-bit). The Meridian 518 will sell for $1600. Watch for a review.

Counterpoint showed a prototype of their first CD player, the DA-12. The unit combines many design aspects of their popular DA-10 processor and DA-11 CD transport in a single chassis. The DA-12 features interchangeable DACs, optional HDCD™ decoding, a Philips CDM-12.4 mechanism, discrete I/V stage, and a motorized remote volume control for analog-domain attenuation. The CD-12 is projected to cost about $2995—a price that will vary with the different DAC and HDCD options.

Following their success in distributing the acclaimed belt-drive CD transports made by C.E.C., Parasound Products has introduced a belt-driven transport under their own name. The Parasound C/BD-2000 transport is based on a C.E.C. mechanism and features a Scientific Conversion pulse transformer, AES/EBU and coaxial outputs, and a sliding drawer to access the top-loading mechanism. The unit should be available in November and is projected to cost about $1500.

Pioneer dramatically reduced the price of Compact Disc Recordable (CDR) machines with the launch at the Show of their $2000 PDR-99 Elite CDR. Considering the success of Pioneer's $4000 first-generation CDR machines, the company hopes to expand the market for home CD recording. The PDR-99 features a new version of Pioneer's Legato Link conversion system, Pioneer's famous Stable Platter mechanism, and a host of new convenience features. For the CDR format to have wider appeal, the price of blanks—now about $15 for a 60-minute disc—will have to drop. Unfortunately, consumer CDR machines such as the PDR-99 won't record on the less expensive and more easily available 74-minute professional CDR blanks because of legal wrangling; consumer blanks have a royalty built-in to their price, which is supposed to compensate artists for the alleged lost revenue due to home digital recording. At any rate, a $2000 CDR machine is exciting news.

² At one demonstration/press conference in Las Vegas, Snell engineers were soldering inside the box while members of the press were arriving. —TJN

Meridian Audio 518 Digital Audio Processor

Sterophile, September 1995
Conrad-Johnson showed a prototype of their new CD transport, the DR-1 ($1695), which features a sophisticated reclocking mechanism for low jitter. C-J also hinted that they’re working on an ambitious new digital processor for release early next year.

Marantz introduced three new CD players and showed a Mk.II version of their highly acclaimed CD-63 machine. The CD-63 Mk.II player retains the original’s $399 price, with the CD-63 Special Edition still available at $499. At the top of the line, the $1199 CD-17 player features digital servo control and a Philips CDM-12.1 laser mechanism. The other new entries are the CC-65 SE, a Special Edition version of the company’s CC-65 five-disc changer, and the entry-level CD-46 ($249). Finally, Marantz previewed their CD-23 player—a gorgeous top-loading design with a round glass top and unusual disc-clamping mechanism.

Marantz CD-23 CD player

I usually don’t write about cables in my Show reports, but I was intrigued by the new Kimber/Illuminati coaxial digital interconnect. The S/PDIF cable has solid-silver conductors and a seven-layer Teflon dielectric. Each cable is individually calibrated in an RF lab using a Time Domain Reflectometer and has a flat impedance of 74.8 ohms. The price is $225/meter plus $100 termination. I brought one home from the Show, and I’m using it to good effect between a Mark Levinson No.31 transport and the Spectral SDR-2000 Pro processor.

N.E.W. introduced their battery-powered DCA 5 digital processor. The processor, said to be priced at “under $3000,” is housed in a large black square (the battery)—which makes an ideal platform for a CD transport. It features Burr-Brown PCM63 DACs and a custom output stage. I was impressed by the sound of the prototype DCA 5 in an all-battery–powered N.E.W. system.

Valve Amplification Company (VAC) debuted two digital products: the model 22.1 HDCD–equipped digital processor ($1890) and matching 23.1 transport. The 22.1 features five power supplies, a triode output stage, the PMD100 HDCD decoder/filter, and Analog Devices multibit DACs. The unit is available without the triode output stage for $1590 and carries the designation 22.0. The VAC 23.1 is based on the Pioneer Stable Platter mechanism, which is then tweaked by VAC to make it more rigid. The mechanism is also isolated on a VAC–designed suspension, with the suspension tuning aimed at reducing servo activity (a technique first used in the Naim CDS). The gorgeous-looking 23.1 transport carries a list price of $1650 and will be available in mid-September.

I had a chance to hear the multichannel DTS digital-encoding system under ideal circumstances at the Show. Thiel played their CS7 loudspeakers in the front channels and the new SCS2s in the rear fed by a DTS-encoded source disc and decoder. Amplification was by Classé. Although only one recording was available for audition in the DTS format, I was impressed by the sound. Thiel had the good sense to keep the surrounds low in level, demonstrating that a tastefully set up surround system can enhance music playback.

Picking the best-sounding room at the Show was easy this year: the real standout was the Cary Audio/ProAc room, which featured the Cary CAD-805 single-ended tubed monoblocks driving the new ProAc Response 2.5 loudspeakers ($4500). The front end was Cary’s CD-300 CD player feeding a Cary SLP-94 preamp. Monster Cable interconnects and cables wired the system. The sound was stunning, with a beautiful harmonic rightness and an exceptionally well-defined soundstage. I also got a chance to hear Chesky’s fabulous new recording of the group Oregon on this system.

Next year’s CES is planned for Orlando, but it’s still up in the air if the High End will exhibit there or have their own show—or use the New York Stereophile Show’s trade days to conduct business.

—Robert Harley

**Thomas J. Norton on Home Theater**

I t may have been small. It may have been quiet. But what was probably the last Chicago Summer CES was definitely not without Home Theater things to report on. The big story, of course, remains 5.1 discrete surround-sound, and the two contenders—Dolby’s AC-3 and DTS’s Coherent Acoustics—were there in force, slugging it out. Dolby, in particular, plans an active software-release schedule for the rest of the year: 35 AC-3 discs are promised by the beginning of 1996.

Dolby, being first to market, plainly had the most action in Chicago. There were, as at past shows, several active demonstrations of AC-3. Enlightened Audio Designs combined with Vidikon, Faroudja, and NHT (the last with their now-in-production VT-2 Home Theater loudspeakers) for an effective demonstration. They leaned pretty heavily on True Lies for demo material, but they also used Stargate on the first of my two visits to their room. My only complaint: the sound was too bright. They didn’t appear to be using the high-frequency cinema compensation that’s built-in to the EAD TheaterMaster, and every AC-3 disc I’ve heard needs top-end softening to sound its best.

The same might be said of Dolby’s own demonstration. This also made use of the TheaterMaster, along with PSB Stratus Minis and seven (I think!) PSB subwoofers. Runco

**The Big Story, of Course, Remains 5.1 Discrete Surround-Sound.**

Stereophile, September 1995

WorldRadioHistory 87
What's behind your wall socket can kill. It can kill performance. It can kill equipment. But you can protect your audio and video components with the MAX® 1000+ Surge Protector/Line Conditioner - from Panamax. The MAX 1000+ filters out EMI/RFI noise, for cleaner sound & a sharper picture. And it protects from surges and spikes - even lightning strikes - so effectively Panamax backs it with a lifetime, $5 million connected equipment warranty! Don't put your equipment in danger. Call Panamax for more information on the MAX 1000+. 1-800-472-5555 ext. 3983.
provided the projection equipment here.

I was dumbfounded by the Dolby demo. They attempted to compare the sound of Pro Logic with that of the AC-3 from the same disc—I suppose to show AC-3’s superiority. The AC-3 did sound better (except for that inevitable HF emphasis—again, no cinema EQ). But the demo was so poorly set up that the outcome was inevitable: this was perhaps the worst-sounding Pro Logic demonstration I’ve ever heard, heavy center-loaded with—from my listening position, at least—little sound evident from the left, right, surrounds, or sub. And the AC-3 playback was several decibels louder than the Pro Logic.

I speak from experience here. Two weeks before CES I made a similar comparison, but over an extended period, in considerably more depth, and with considerably more attention to optimizing both AC-3 and Pro Logic and in matching the levels as closely as possible. The results are reported in our second Stereophile Guide to Home Theater—on sale as you read this or shortly thereafter.

I’ll just say here that Dolby had nothing to fear from a carefully structured comparison. AC-3 does sound better than Pro Logic, but the differences are a lot more subtle than you might expect—and more subtle than my prior exposure to AC-3 had led me to believe—at least on currently available program material. As producers learn how to better use the discrete nature of AC-3, I expect interesting, and I hope rewarding, results.

The best-sounding AC-3 demo at the Show, however, was in the Kenwood room. What’s that, you say? Kenwood, K-E-N-W-O-O-D. They were using their new THX loudspeaker system (LS-XIF fronts, LS-X1S surrounds, and a pair of SW-X1 unpowered subwoofers—about $3100 for the whole loudspeaker array) driven by their new KR-X1000 THX receiver ($1200). The last was modified to accept discrete inputs from a Kenwood prototype AC-3 processor. A new Kenwood KM-X1000 THX-certified power amplifier (130Wpc into 8 ohms) drove the two subwoofers. At $400, it’s the cheapest THX stereo amplifier I know of. The room had problems: the dialog, in particular, sounded cavernous, but the sound as a whole was big, expansive, and thoroughly cinematic. From a thoroughly unexpected source.

In other new-product news, much of it heavily AC-3-oriented, **Denon** announced the AVP-8000 ($3500), a new surround-sound tuner-preampmliier with built-in AC-3 and Pro Logic decoding. They also have two new power amplifiers, the three-channel POA-8300 ($1500) and two-channel POA-8200 ($1000), each with 120Wpc (8 ohms). All three new products will also be THX-certified. There will also be a new version of Denon’s LA-3500 laserdisc player with AC-3, RF out; and a less expensive AC-3-capable player, the LA-2300, at $700. All products scheduled for fall delivery.

Look for a flood of new AC-3 products from **Pioneer Elite**. By the time you read this, you should see the SP-991D stand-alone surround-sound processor ($1530), the VSX-99 receiver ($2100), and three new Elite laserdisc players—including the CLD-99 ($2400), which replaces the CLD-97. Yamaha will have both their RXV2090 receiver ($1499) and DDP-1 outboard AC-3 adapter ($599) in the stores this month, along with the CDV-W901 AC-3 laserdisc player ($899). And **Krell**’s $7000 KAV CSC do-all surround-sound processor-preamp should be out by the fall as well. Krell is making provision for both AC-3 and DTS on-board.

Speaking of DTS, they repeated their demonstrations from the Stereophile Show in Los Angeles last April, but in much larger rooms and to much better effect. I had reservations about the setup of their big Home Theater demo (the center sounded wrong and the surrounds too distant), but sonically it certainly held up to any of the AC-3 demos. Music-only demos of DTS were also being conducted by Mobile Fidelity International and Thiel. I preferred the sound in the latter suite by a considerable margin, but the musical material—big band—is not a genre I much care for, so judgments were difficult at best. However, there’s definitely promise in the DTS music format, when it’s properly used.

In contrast to audio—for-video, new things in video itself were thin on the ground at this CES—no DVD demos in sight. Most of the video accompanying the above surround-sound demos was disappointing—even from the high-end projectors, doubilers, and quaduplexers on display. I can think of at least five video setups at the Stereophile Show that beat the **huge** out of anything I saw in Chicago, plus one I currently have at home (A Barcovision 701 projector and Dwin
Heaven on Earth.

"...I'm astonished. Don't wrap it up, I'll eat it here."
- Lee Konitz - legendary jazz, alto-saxophonist.

Cello Angel.

Send me a brochure on the Cello Angel system, which consists of Cello's Encore Line Preamplifier, Serafin active, bi-amplified speakers, and Cello Strings cables.

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Cello Music & Film Systems
LD-2 line-doubler). The failure, I'm certain, was in the setups, not in the equipment.

The one video surprise came from an unexpected source: ProScan's one-piece, 80" (that's right—eighty-inch) PS80690 rear-projection TV using 9" tubes (under $9000) knocked me out. It wasn't the very best big-screen picture I've seen, but it's definitely competitive with the best at similar prices. And the same chassis (with 9" tubes) is also available in 60" and 52" sets, if you can't handle the 650-lb (!) PS80690.

In the accessories category, Kimber Kable introduced Shmarkers, which are short lengths of shrink wrap in various colors and sizes designed to label the cables in an audio/video—or straight audio—system. Custom lettering is available (perhaps including a dealer's logo), but of primary interest to consumers will be three "kits"—assortments of various labels—that Kimber will market for Home Theater ($24), home stereo/pre-wire ($16), and car stereo ($12).

In miscellaneous Home Theater audio news, Snell Acoustics was showing—but not demonstrating—their new in-wall loudspeakers, including THX-certified models. From

Parasound comes a new power amplifier: the three-channel, 185Wpc (8 ohms), John Curl–designed HCA-2003 ($1595). Marantz has updated their LV-510 laserdisc player for AC-3 (it's now the LV-520, at $799). And Esoteric Audio has become the latest cable manufacturer to join the THX ranks, with a line of soon-to-be-introduced cables and interconnects.

Finally, Atlantic Technology was showing—convincingly—the final production version of their complete THX loudspeaker system. The System 350, with two powered subwoofers, should come in at around $3200, making it less expensive than the Kenwood array discussed above. Perhaps of even more interest to the budget-minded—or the audiophile seeking a separate system for Home Theater—was Atlantic's new System 220. The whole loudspeaker system (with a single sub) can be had for less than $1400. It definitely sounded like more than the sum of its parts. Another observer said that it sounded better than some of the big-ticket Home Theater rigs he'd heard, and I couldn't disagree—at least for films.

—Thomas J. Norton

The best picture at CES wasn't even at CES, but was instead in Dallas, where INFocomm was being held. INFocomm, a trade show dedicated to the video-presentation market, is heavily data-display oriented, but every year they hold a big video-projection shootout—dozens of monitors showing the same images in the same darkened room on the same type and size screens. I stopped off at INFocomm on my way to Chicago to scope out likely candidates for future reviews for the Stereophile Guide to Home Theater. The most exciting projector I saw there wasn't even entered in the shootout. Dwin's new $12,000 projector mated to their LD-2 line-doubler ($3500) will definitely be worth a close look when it comes out late this summer or early fall. I saw them both in Dwin's own booth. While I won't say that the combination will beat out the best of the other projectors I've seen—particularly when mated with, say, a Faroudja line-quadrupler—the Faroudja combination will cost you $30,000–$40,000. The Dwin, at least in prototype form, is good enough to give you second thoughts about spending that much—assuming you even can. It could stir up the video market.

—Thomas J. Norton

Wes Phillips on hot new stuff

I spent some time trend-watching and sniffing out new products at the Show—it wasn't all backbiting and gossip! I was pleased to see that vinyl continues to flourish, as do tapes, tools, tools. Also high on the list of industry priorities was convenience—ie, remote control. But the predominant trends I noted as I roamed the halls were: 1) major efforts to integrate surround-sound (both video-related and music-only) into the high-end ethos, and 2) a heartening emphasis on value received.

To begin with, the latter, Joseph Audio's RM7si loudspeakers ($1299/pair) sounded even more musical than I remembered from the Stereophile Show—and that's saying a lot. Michael Green's tunable Revolution series speakers, priced from $600 to $1300, also fascinated me. In MoFi's room, I heard the Rev 80s ($1295) putting out some serious riddum to a GAIN-remastered reissue of Bob Marley's Exodus—a woofer-buster if ever there was one.

Alon also packed a quart of music into a pint jar with their Trio system ($1495), which consists of a pair of their Petite speakers mated to the new Petite Woofer—two 6.5" drivers incorporating a passive 12dB/octave low-pass filter rolling off the response above 55Hz. What makes the PW-1 unique is that a separate filter is utilized by each driver, so that each
For more than three centuries, experts have been trying to discover the secret behind some rather good sounding small wooden boxes from Cremona, Italy. (For the members of the Butt-Head-generation amongst our readers: these are called 'violins' made by a dude named Stradivari.)

For the last two decades, some small wooden boxes from Skanderborg, Denmark have turned out to be just as puzzling.

Why do our loudspeakers sound so open and natural? Where does the absolute transparency and precision come from? And where the well-defined, powerful bass? Why do even our small but perfectly shaped models (like the Contour 1.3 our company raccoon Knudsen is sitting on) outperform most, if not all, coffin-sized aberrations in the test room? The answer, of course, lies in our legendary oversized voice-coils, the flat membrane geometry and the minimization of arrival time delay. As well as in our famous superfast Esotar tweeters, whose backwards-radiated energy is completely absorbed for echo-free sound reproduction.

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If we don’t offer people musically accurate multichannel sound systems, we can’t blame them for buying crappy ones.

reproduces a separate channel. Designer Carl Marchisotto explained: “This approach sounds more natural than mixing the low-frequency information in the electrical domain—both ambient and directional signals are better preserved.”

I’ve been auditioning a pair of the Petites and think their refined sound is remarkably uncompromised by the addition of the woofer. In point of fact, they sound better—so good, indeed, that when Carl told me the price was 1500 smackers, I responded that he was giving a lot of subwoofer for 1.5 kilobucks. He looked puzzled for a minute and said, “The woofer’s only $500—that’s the system price!” I want one.

JoLida showed two nifty integrated tube amps: the 20Wpc 101A ($550) and the 30Wpc SJ 202A ($650). How do they do it, how do they do it, how do they do it? Volume, volume, turn up the volume. Oh, sorry, I got carried away—JoLida is in the commercial vacuum-tube sector, producing radar gear and the like. Additionally, they manufacture their own transformers—which has got to help keep prices down. You must see these little jewels, they don’t look affordable at all.

Our own Michael Fremer presided at a seminar entitled “The Future of Two-Channel Audio: Will the ‘Woof’ Survive?,” wherein the panelists debated whether people will be sitting around listening to music in two channels in another 20 years. “They will as long as there are people like me,” retorted TAS’s Frank Doris. Other panelists were less sure.

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Fortunately, high-end manufacturers are already responding to that challenge. Thiel showed their new SCS-2 video/multichannel speaker ($925 each) to great effect, using Audio Research’s impressive SPD-1 non-Dolby processor. They used three SCS-2s to augment a pair of CS-7s in a music-only system, and I thought the sound was marvelously airy and timbrally true. The one discrete five-channel CD they were relying on did sound too “in the middle of the band” for my taste, but I heard a very convincing argument for ARC’s quasi-Hafler processor—as well as a great-sounding center/rear-channel speaker!

Arcam announced the Xeta 2 ($1200), an add-on processor that contains three 55Wpc amplifiers for center and rear channels, video switching (composite only), and on-screen setup and display graphics. It can be added to an existing separates system between preamp and amplifier, used as a stand-alone preamp, or installed through the processor loop of a receiver. I thought the Xeta 1 demonstrated in Vegas showed tremendous promise, and Arcam claims this unit has even clearer, better sound quality, so I consider the Xeta 2 a must-audition.

McCormack showed the Power Drive DNA 3 ($1995 projected price), a three-channel amplifier (one center/two rear, for example) that simplifies implementing multichannel audio. Their surprisingly affordable demo used Mike Moffat’s Angstrom processor ($2995) and Vandersteen loudspeakers—it turned out to be one of the uncontested hits of SCES. Despite the uncrowded nature of the Show, it took me seven tries to get into McCormack’s room. It was a roach motel for audiophiles: they went in, but they didn’t come out!

I mentioned convenience as one of the current trends, and indeed everybody is designing units with remote control—lability. Conrad-Johnson showed the Premiers Fourteen and Fifteen ($4000 each), a line-level preamp and phono section, respectively, that I want more than anything else I saw at the Show. Mama! Of course, with serious, take-no-prisoners audio like these babies, remote control isn’t a convenience feature—it sounds better than regular physical controls. Yeah, that’s it! I’m not moving another step. Hey! While you’re up, would you get me another beer from the fridge? I got work to do. —Wes Phillips

In a Show where truly excellent sound was relatively rare—I wanted to be impressed by the Audio Artistry Vivaldi speakers driven by Sonic Frontiers electronics and the Totem Monitors driven by SIM Celeste electronics, for example, but in both cases was put off by excessive air-conditioning noise (a complaint that affected a number of displays)—a few rooms stood out in my memory. The Paragon Jubilee monitors ($1795/pair), used with JEM subwoofers ($2000/pair) and driven by Rowland amplification with a Wadia 2025 digital front-end, sounded simply magnificent. Barbara Hendricks’ cream-textured soprano in the “Et incarnatus est,” from Mozart’s unfinished C-Minor Mass (Peter Schreier, Dresden Staatskapelle, Philips 426 273-2), simply soared. This Minneapolis-based speaker company is one to watch!

And while I found the sound of the Wilson WATTs/Puppies

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in the Sutherland room spoiled by a midbass hump from the less-than-optimal room acoustics, the music still managed to communicate—particularly when Ron Sutherland put on mono Fred Astaire soundtrack recordings. Killer music choice!

The Infinity demonstrations seemed to epitomize the angst the High End is experiencing as it gets more heavily into Home Theater. In one room, Infinity demonstrated the high-sensitivity Composition Series speakers in a Home Theater setting, using director’s chairs, modern decor, and True Lies as the source program. In the other room, featuring padded armchairs and more traditional furnishings, they had the Gamma stereo speakers set up with Mark Levinson electronics, playing a Haydn Trumpet concerto. The latter room was where I felt most comfortable—it also sounded superb—but most showgoers seemed to be more attracted by the explosions in True Lies.

I also sat through the obligatory True Lies excerpt in the room shared by EAD and NHT. Not a bad sound, overall—particularly when they switched to the HDCD-encoded Rutter Requiem on Reference Recordings. But sitting rather close to the surround speakers, I was bothered by some HF weirdnesses emanating from them on True Lies, these presumably artifacts of the AC-3 encoding.

After several Home Theater demos that majored heavily in explosions but less so in finesse, it was good to find the Platinum Audio room, where I listened to some Austin blues courtesy of the Chris Duarte Group. While I agree with Platinum’s Phil Jones that this recording, Strat Magik, sounded like it was “mixed by the guitarist”—the bass and drums were pecking around the edges of the giant guitar image—the speakers, driven by Mesa’s new Baron tube amp via some Flatline Red Dawn cable, boogied in spades! Source was a Wadia 21.

Competing with Platinum for the “Show’s Smallest Demo Room” award was Joseph Audio, who repeated their success at Stereophile’s Los Angeles Show by coaxing very musical sound from the RM7si minimonitors under less-than-ideal conditions. Melos also had mediocre room acoustics to deal with, but transfixxed me with Pamela Warrick-Smith’s rendition of “Amazing Grace” (Greenhays GR 70721). Avalon Radians driven by a Melos MA333 preamp and MA200 triode amps provided the wherewithal.

My awards for “Best Soundstaging at the Show” go to Soundwave, with their $550/pair Metronome bookshelf speakers—which threw a huge image despite a somewhat “shouty” low treble—and to Gallo Acoustics, with their Nucleus/Bassball combination in the Tiff Electronics Company room powered by a Mesa Baron via Esoteric cables.

A speaker that looked great but wasn’t being actively demonstrated was the Celestion Kingston. Its drive-units are derived from those used in the British company’s long-established 700SE, but are housed in a cast, mineral-filled-polymer enclosure. The Kingston will start shipping this month and is projected to sell for $4000/pair.

More high technology was to be found in the Unity Audio room, where all-ceramic drive-units featured heavily in the Michigan company’s new speaker range. Unity was also proclaiming the merits of their new crossover topology, claiming to “operate completely outside the signal path.” Hmm, guess I should read their white paper.

Finally, a highlight of the Show for me was not a sound at all, but the discovery of $20/pair interconnects, and speaker cables selling for as little as $3/foot, in the Straight Wire room. Too many audiophiles, I’m sure, are put off by the high admission price to the High End. Anything audio companies can do to ease the pain of entry gets my enthusiastic support.

—John Atkinson

A HIGHLIGHT OF THE SHOW FOR ME WAS NOT A SOUND, BUT THE DISCOVERY OF $20/PAIR INTERCONNECTS, AND SPEAKER CABLES SELLING FOR AS LITTLE AS $3/FOOT, IN THE STRAIGHT WIRE ROOM.
A

s John Atkinson pointed out in “Wired,” his June ’95 “As
We See It,” there must be something besides the old RLC
(resistance, inductance, capacitance) conundrum to explain
the difference in sound between cables. And, of course, as a card-carrying
Subjectivist in good standing, I concur. I thought I’d call XLO’s Roger
Skoff to get his (copious) views on the subject to accompany my review
elsewhere in this issue of his Signature speaker cables and interconnects.
Herewith find what you always wanted to know about cables but were
far too intimidated and afraid to ask. (Please remember, the views
expressed are those of The Skoffman!)

Jonathan Scull: So, Roger, in 25,000 words or less, tell us everything
you know about cable.

Roger Skoff: Let’s start at the beginning. Before the end of
the 19th century, a whole lot of people had been playing with
electricity, but nobody actually did anything with it. Henry
played with inductance, Faraday with capacitance, Ampère
with current, Volta with voltage, and old Ben Franklin was
flying kites. But other than the telegraph, which was nothing
more than sending a spark down a wire, no one actually did
anything with wire. However, in the late 19th century, we
got electric light; along with it came the power companies—
and they used wire, of course. There were two different kinds
of power companies: the Edison companies, which were
sending DC, and the Tesla or Westinghouse companies,
which sent AC down the line.

When dealing with DC, the only thing that matters is resis-
tance. So the Edison Company wanted great big wires with
as little resistance as possible. That way they could sell as much
electricity as they could generate, instead of losing it as heat.
The Tesla and Westinghouse companies were sending AC,
but because it was single-frequency 60Hz sinewaves, capa-
citance and inductance have practically no effect, and for them,
too, the only thing that really mattered was resistance.

Then along came the telephone company, and did some-
thing radically different: Instead of just power, what they
sent out on their lines was a complex wire signal, of the: for
that time, absolutely enormous bandwidth of 400Hz to about
4kHz (about three-and-a-half octaves).

Between their new kind of signal, and the sometimes huge
distances over which they were sending it, they started run-
ning into a whole new range of problems. Resistance was
obviously still a factor; and so became capacitance and
inductance—no big deal on a short cable (like for audio), but
suddenly a tremendous deal when a cable is ten or a hun-
dred miles long. A brand-new consideration was also added:
characteristic impedance, the classic bugaboo of high fre-
cuencies and long transmission lines.

The result of all this was that the people at the telephone
company were the first ones to study wires to see what they
did and how they worked; in doing so, they began what’s
known as electrical engineering. What they developed was
adopted by the universities, and they too called it electrical
engineering. But notice they didn’t call it “telephone-
company electrical engineering.” And when they taught this
new discipline, they didn’t say it was what the telephone com-
pany had learned about it at the turn of the century; they pre-
sented it as an absolute, and when information was given
about wire, they overlooked entirely the fact that when
the telephone company talks about wire, they’re talking
about miles of it, whereas, for hi-fi, a long run of wire can
mean 30 feet.

Scull: That’s a major point of departure between the requirements
of audio and those of long-distance transmission.

Skoff: Right, and it can make a huge difference! You’ve heard
of the thin-film effect? Many materials will have radically

Wires, Insulators, Conductors, & Audio Signals

XLO Electric’s Roger Skoff talks with Jonathan Scull
different physical or electrical properties in thin films than in thicker ones. For instance, two of the more common thin films in use today are diamond and arsenic. They behave radically different in very thin films than they do otherwise. Copperoxide is another one, but we'll come back to that. You see, we've got something analogous here. Just as thin films of different material will have different physical and electrical characteristics from thicker ones, the things that affect short lengths of wire are quite different from those that affect long ones.

That's why the engineering types have never been able to pick up on the idea of wires, because they read in their textbooks that what matters is resistance, capacitance, and inductance—R, C, and L—along with the associated characteristic impedance. No one pointed out to them that all this was discovered by the telephone company regarding 10or 100-mile-long lines, and nobody suggested to them that what affects a wire on a 10-mile run might be different from what affects a much smaller run.

**Scully:** Let's dig into the basics a bit and put what you've said so far into context.

**Skoff:** No one denies that R, L, and C exist. If you try to run a current through a wire, there will be resistance. The wire's resistance [hence the amount of the current] is determined by the gauge of the wire. If two wires making up a cable are a particular distance apart, you'll get a certain inductance and capacitance. [The farther apart the wires, the greater the inductance and the lower the capacitance, and vice versa.—Ed.] We always use insulated wire for both legs of a cable, so of course the distance between the wires is at least twice the thickness of the insulation. You can't get the primary wires any closer; and, if the cable has an outside jacket, you can't get them any farther apart.

A piece of wire has R, C, and L, every piece of wire is both a high- and a low-pass filter. By knowing the R, C, and L (all of which you can measure with a meter), you can calculate the filter turnover frequencies for any piece of wire, even in lengths considerably longer than we would normally use. Even in cables that the High End would consider to have high capacitance or high inductance, the high- and low-pass turnover frequencies are well above and well below the audio band and won't affect the sound. It's pretty clear, therefore, that resistance, capacitance, and inductance aren't the only things that influence the sound of cables.

**Scully:** So, Roger, what does affect the sound?

**Skoff:** Well, for one thing, field interactions. There are two fields formed every time a cable carries a signal. The one most people are aware of is the electromagnetic field that's current-controlled and forms around the wire of a cable whenever you pass current through it. The other, which most people—even most cable designers—disregard entirely, is the electrostatic field that forms around the insulation of a signal-bearing insulated wire and is controlled entirely by signal voltage.

To get an idea of how important these fields are, consider this: Signal information travels at nearly the speed of light, but, as Dick Olsher pointed out in a Stereophile cable review some while ago, the electrons that supposedly carry it move at only a small fraction of light speed. The anomaly involved here has caused some people to suggest that it's the fields, and not the electrons, that actually carry the signal.

Another thing that goes to support the idea that the fields may be strongly involved with signal transmission is the measurable differences in propagation velocity (the speed of transmission expressed as a percentage of the speed of light) that result from doing nothing more than changing the insulation material used on identical lengths of wire. If the wire is the same, and, as is obviously the case, there's no current flow through the insulation, then the only thing that can affect the propagation velocity is the fields.

**Scully:** You know, Roger, I'm interested in anything to do with propagation.

**Skoff:** [in a most serious tone] Jonathan, this is not hi-fi voodoo, it's just physics. You can find the propagation velocities of any number of insulating materials in any engineering manual. And these figures are significant, as they range from as little as about 85% of the speed of light to as much as about 97%, depending on the insulating material used. To me, this clearly indicates a crucial role for signal-formed fields in the functioning—and therefore the "sound"—of cables.

If you start examining how field interactions affect the signal, you begin to see why our cable is made the way it is—we take great care to optimize these field relationships. All cables in the XLO Electric lineup—Standard, Reference, and Signature—are topologically identical in terms of their field relationships, even though they look radically different from each other. The reason is this: remember that the electromagnetic field is determined by current, and the electrostatic field by voltage.

If you look at different cable applications, you see that each has a different current-to-voltage ratio, and therefore a different ratio of electromagnetic-to-electrostatic field intensity. For example, a phono cable carries a signal that's exceedingly low current at exceedingly low voltage—really low, low stuff. Line-level cables have a different problem entirely. When you use Ohm's Law to calculate how much current is involved in carrying a 1V signal from, say, a 150 ohm source—a CD player, for example—into a 47k load like a preamp, you discover that it's practically zero. So in a line-level cable, you have relatively high voltage to relatively low current, and in speaker cables it's just the opposite: relatively low voltage to relatively high current.

For each of these applications, there's only one optimum field relationship, so the design of the cables was set up to optimize these relationships given different voltage-to-current scenarios. That's why our cable look different, even though functionally they're the same.

Another overlooked aspect of cable design is the capacitive discharge effect. A capacitor is any two conductors separated by a nonconductor or insulator. The two conductors are called "plates," and the nonconductor is called the "dielectric." The nature of a capacitor is that it will store or release energy under appropriate circumstances. As long as the two plates are at different levels or conditions of electrical "charge," the dielectric will take on and store energy, up to a maximum determined by its "dielectric constant," and that energy will stay stored until something happens to release or dissipate it.

Look at a classic sinewave. It starts at the zero line, rises up to its positive peak, and then falls back to the zero line. Then it goes down to its negative peak, then back up to zero.
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When that signal runs through a cable or any other capacitor, as the signal starts up from the zero line, the dielectric is charging, receiving its maximum charge at positive peak. As the signal turns down toward the zero line, the dielectric will stay charged at the same level it was at the positive peak. As soon as the sine wave crosses the zero-crossing point it turns negative, and that first instant of negative energy acts like a switch—it shorts the dielectric and results in all stored energy being dumped into the signal path out of phase!

Once again, Jonathan, let me remind you that this isn’t voodoo, it’s just simple physics. There is no question that when dumping positive energy during the negative phase of the signal, you get either cancellation or out-of-phase artifacts in the signal. The nature of this cancellation or the generated artifacts depends on two things: how much energy was stored, and how quickly it was dumped. If it’s released quickly, there’s only a small effect right at the zero line or just past it. If there’s a slow dump, there will be more of an effect. Understand that the dump speed of any dielectric material is part of the nature of that material. The frequency of the signal or the amplitude means nothing—it’s strictly the function of what the dielectric is made of.

**Scull:** *What dielectric do you use at XLO?*

**Skoff:** On all of our XLO Electric™ cables, the only dielectric material we use for primary insulation on the major wires, the legs (the wire groups), the cores the wires are formed around, the outer jackets, or the dielectric in the connectors—because even the connectors act like capacitors—is Teflon.

**Scull:** *What’s your wire made of?*

**Skoff:** In our Signature line we use what’s called Lab Grade copper, which we buy from Nippon Mining Company—the only firm that produces it in quantity. There’s only a very small market for stuff that pure. It was originally developed in the 1920s for physics experimentation in the US, and they’d make it only a couple of grams at a time, by a multistep process called “zone refining.” To give you a price comparison, ordinary copper—the stuff pennies are made from—is called ETP, or Tough Pitch. You can buy ETP wire for about a dollar a pound. The next step up is oxygen-free copper, which is more pure. You can buy the least expensive grade of oxygen-free copper wire for about three bucks a pound, and the more expensive grades range up to as high as about 10 dollars.

**Scull:** *Why is one more expensive?*

**Skoff:** The problem with oxygen-free copper is that it starts oxidizing the instant after being formed. That’s why virtually every manufacturer takes the wire right out of the rolling mill into a silver or tinning bath—to keep it from oxidizing. This plating treatment is very common and, in fact, is not such a big deal—we’re only talking about one of the cheaper versions of OFC. Silvered or tinned is how most of this wire is normally made.

Getting the wire oxygen-free without it being tinned or silvered is much more difficult and very much more expensive, because so little of it is made that way. The oxygen-free copper that we at XLO buy for our least expensive cables that use it is rolled in a nitrogen atmosphere and packed air-tight with no plating on it at all. That’s the most expensive oxygen-free there is.

The Lab Grade copper we use in the Signature cables costs...
Listen Past the Equipment
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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
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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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**Scull:** But isn’t all wire subject to a few seconds of contact with the air?

**Skoff:** Yes. The fact of the matter is that there are a couple of seconds where even XLO wire is exposed to the air—it has to be—which brings up an interesting point regarding the thin-film effects I mentioned earlier. When you see wires that are dark green with a coating of copper oxide, that in fact doesn’t affect the sound at all! All that’s happened is that the wire has grown itself another insulator, because a thick film of copper oxide is a nonconductor. But a thin film of copper oxide, on the other hand, is a semiconductor. And there simply isn’t any copper in existence that doesn’t have some copper oxide on it if it’s ever been exposed to the air for any period of time. So very thin films of copper oxide will conduct current in one direction, but not the other.

**Scull:** What?

**Skoff:** Yes, Virginia, the films act exactly like diodes. Remember several years ago when solid-core wire became popular? People said it had so much more resolution than stranded wire. Well, here’s why: First, let’s talk about the difference between stranded and Litz-type wire. Stranded refers to a bunch of wire in contact with each other, not separately insulated. Litz-wire (multiple-strand solid-core) is made up of a bunch of strands that are in contact with each other but insulated one from the other. If this type of wire is properly designed, it will deal with the skin effect—which we’ll come to presently. But for wires not insulated from each other, electrically they’re identical to one thicker wire equal to the sum of area of all of the wires in the group, and they will have exactly the same skin-effect characteristic as that one thicker wire. Electrically, that’s what they are: one thicker wire.

But the stranded wire is much more flexible than solid-core on a gauge-for-gauge basis. The thing that’s important about solid-core vs stranded is this: electrons don’t like to travel in wires, they like to travel in straight lines. If you’ve got a bunch of wires twisted together, the electrons—instead of staying in the same wire and following the twist of the wire group—will just jump from wire to wire in the bundle as they move forward.

With every copper wire in existence having a layer of copper oxide on it—which acts like a diode—every time the electrons jump wire-to-wire they’re passing through two diode layers and suffering what’s known as contact rectification. This effect will actually filter out a whole lot of unnecessary low-level detail, like harmonics, the fifth bounce off the wall of the concert hall, ambience—you know, little unimportant stuff like that.

**Scull:** You’re a riot, Alice!

**Skoff:** Yeah, it is pretty funny! Anyway, with solid-core wire you have this layer of copper oxide around the outside of the wire, and the electrons don’t have to jump through it—no diode effect. That’s why XLO always uses multiple-strand solid-core instead of stranded wire, even though multistrand solid-core is the expensive way of doing it.

**Scull:** What about silver wire?

**Skoff:** That’s an interesting question. If you take a look again at the engineering handbooks, you’ll find that the conductivity of silver is shown as being greater than the conductivity of copper by about 9%. That’s DC conductivity.

**Scull:** Emphasis on DC?

**Skoff:** Exactly. If you take a look at AC resistivity, you’ll find that copper is actually better than silver.

**Scull:** Interesting. I know you’re about to explain why . .

**Skoff:** The reason for this revolves around self-inductance, as expressed in the AC-resistivity gradient of the wire. This is where the skin effect comes from. The resistances at the center of a wire and at the outside differ, and it’s not an on/off function—it’s a gradient function. Silver has a much sharper AC-resistivity gradient between the center and the outside of the wire than copper does. The result is that if you take any length of any gauge of silver wire and compare it to the same length of the same gauge of copper wire, you discover that, for an AC signal of any frequency, silver wire will always have more phase shift because of the sharper AC-resistivity gradient.

**Scull:** You’re gonna be very popular with the Silver Council!

**Skoff:** Sorry, Jonathan, but that’s the fact of the matter. Phase shift will be greater using silver wire. You can get around it very simply, however.

**Scull:** How’s that?

**Skoff:** Just make the wire thinner. Another thing you can find in engineering handbooks is the ride depth, or depth of penetration, for a signal of any frequency. Low frequencies will have a tendency to ride toward the center of the wire, high frequencies will tend to ride toward the outside. The depth of the wire to which the signal penetrates depends on the frequency. The way you get around this problem is simple. To eliminate phase-shift entirely, all you do is use a wire that’s less than twice the ride depth of the highest frequency you wish to pass in thickness.

**Scull:** Can you explain that in greater detail?

**Skoff:** Sure, but let’s use kindergarten-type numbers for the example. They won’t be anything like right, but they’ll be a lot easier to deal with. Let’s suppose that you have a ¼"-thick wire, and you want to pass a broadband music signal through it. If your signal has a highest included frequency of 20kHz and the depth of penetration for that frequency in that kind of wire is ¼", you’re going to have some phase shift between your lowest and your highest frequencies. The reason for this is that your 20kHz signal component is going to penetrate only partway into the wire, and all of the lower frequencies will ride deeper in. Because signals traveling at different depths in the wire travel at different speeds, phase shift will be the inevitable result. Now let’s suppose that, instead of a ¼"-thick wire, you were to use only ½". At ¼", the depth of penetration of your 20kHz signal would be more than half the diameter of the wire, and the result would be that it would penetrate the wire completely. And, if your highest frequency rides all the way through the wire, so will all of your lower frequencies. Everything will travel at the same speed and there will be no phase shift.

This is no big secret. And, to tie it back to the subject of silver, just about all of the more knowledgeable cable designers know that you can eliminate silver’s extra phase shift by just making your wires thinner than you would if you were using copper.

**Scull:** Why do I feel there’s a caveat just around the corner?
Skoff: Right! Guess what? When you make your silver wire thinner, its resistance goes up, and you lose any conductivity advantage the silver might have had to offer. That’s why we’ve never used silver in any of our better cables.

You know, Jonathan, where the whole issue of thickness is phase shift becomes critical is in the area of speaker cables. Speaker cables need to be thick, both because they need to be able to carry lots of current, and because the higher resistance of thin cables blows your amplifier’s damping factor and you lose control of your drivers. Making them tick, though, unless you do it properly, opens the door to problems with phase shift.

The ideal solution would be a cable that was both thick and thin at the same time, and a number of people have tried to accomplish that by building thick wires out of groups of individually insulated thin ones. The problem with doing that is that if you put several thin wires together in a group, the magnetic fields for all of those wires will merge, becoming a single magnetic field; the group of individual wires will act once again exactly as if it were a thick wire of the same overall thickness in terms of phase shift. In fact, if you make a thick wire out of a bunch of thin wires, it doesn’t buy you anything at all.

Scull: So how do you handle it?

Skoff: On our lower-cost cables we trickery our way out of it. If you do what’s called a “concentric lay”—one wire in the center surrounded by six wires, surrounded by 12 wires, by 18, by 24, and so on—the wire at the center will always be at the center and will always have the amount of phase shift that it has as a result of being in the center. The wire on the outside will stay at the outside, and will always have the amount of phase shift it has as a result of being on the outside.

**There is no inside or outside to the wire group. That’s why everyone likes the sound of our low-cost wires.**

What we do with our low-cost speaker cables is we’ve developed a very peculiar cabling technique. You’ve seen how lumpy these cables look? That’s because we’ve developed a controlled random-cable-lay procedure that results in no individual wire ever having a fixed position within the group. Each wire is constantly moving between the center and the surface of the cable. When it’s at the outside, the signal it’s carrying gets phase-shifted one way; then, when the wire moves back to the inside, the signal is phase-shifted the other way. The result is that all the phase shifts cancel. There is no inside or outside to the wire group, and that’s why everyone likes the sound of our low-cost cables.

Scull: What about the more expensive speaker cables, like the Signature 5. Is that I’m familiar with?

Skoff: For that we use a large core made out of 19 separate Teflon tubes, and we wind a single layer of copper around that large-diameter core. The wire is 23-gauge—quite thin—and there are 30 wires per leg, each set at a 45° angle around the core. There isn’t any phase shift, because 23-gauge is the right thickness for all frequencies to ride together all the way through the wire. So we use a wire group that’s 30 times as thick as a 23-gauge wire, except it’s effectively only 23-gauge thick. That’s why the Signature does what it does. It’s very expensive because of the way we build it; 38 custom-fabricated Teflon cores, 19 per leg, and 60 Teflon insulators—30 per leg—around the individual wires.

Scull: What’s the purpose of having 19 separate Teflon cores?

Skoff: When you get a chance, array 19 identical coins—pennies will do—with one in the center, six around the one, 12 around the six; that’s called a natural concentric lay. There are a lot of spaces between the coins, and for the purposes of this example, you should consider the coins hollow so they’re mostly air. The air reduces the effective dielectric constant of the core. If you lay a string around the outside circle, you’ll find that there are 19 triangular areas that are not touching the wire that’s laid around them, so that air is right next to the wires. With a lot of small cores we get more air right next to the wires. So we have 30 wires wrapped around these 19 cores, each one insulated, and each of the 19 cores is hollow so that there’s more air in there, too. The more air we can get in there, the lower the effective dielectric constant of the whole core, and the faster the dump rate. The result of all this is that you wind up with very little energy absorption and a very quick dump rate.

Scull: XLO line-level is unshielded, so let’s get the story on that.

Skoff: Remember, a capacitor is any two conductors separated by any nonconductor. Let’s suppose you have the two signal leads surrounded by a shield, then that shield is a conductor, and the insulation on the signal leads becomes the dielectric between each signal lead and the shield. In essence, you’ve thrown another capacitor into the mix, which means you not only have additional capacitive effects, but also additional capacitive discharge effects. The result of it is that the shield will affect the sound of the cable, and an unshielded cable is best if you can get away with it.

Scull: Yes, if you can get away with it. But New York, for example, is a very noisy environment, RF-wise.

Skoff: Even in a moderately noisy RF environment, if the cable is designed properly, each of the leads will act as a shield for the other lead, and you have what’s known as a hum-bucking design. This has been known of since the ‘20s—that doing something as simple as twisting the leads causes each one to act as a shield for the other. It’s obviously only a partial shield, but the way our cables are laid out, the hum-bucking characteristic is quite high, and so they tend not to need hard shielding as much. We do offer shielded versions of our wire; they’re very much thicker than the unshielded variety, because we use a large Teflon-and-air spacer to keep the shield as far away from the actual conductors as possible. Also, where we do use a shield we use separate shield leads going to chassis ground rather than tying it to the RCA connector and dumping noise into the signal path.

Scull: Huh? Are you saying that tying the shield to the negative lead is injurious to the signal?

Skoff: Most designers parallel the negative leg with the shield lead at the RCA jack. And guess what that does? You wind up with more metal on the negative side than the positive side, so the cable becomes asymmetrical even if it wasn’t designed that way. If you check the capacitance of both positive and negative conductors against each other, then check the capacitance between each of those conductors and the shield, it’ll be a different value! So, with “normal” shielding you’ve potentially made the cable asymmetrical, and you’re dumping shield signal right into your signal path.

Scull: Roger, it simply can’t be that evil! If it’s so bad to tie the shield
to ground at the RCA jack, why does almost everyone do it that way?

Skoff: Remember how a generator works—take a wire and pass it through the poles of a magnet cutting the lines of force, and it will produce a current in that wire. If, instead of using a permanent magnet, you take two wires and run AC current through one wire, that’ll create an electromagnetic field around it. When that field collapses, it’ll induce a current in the other wire, and that’s called mutual inductance. If you’re running signal through both wires, each will induce a current in the other every time the electromagnetic field collapses around it.

RF is a huge electromagnetic field that’s forming and collapsing at the RF frequency. When you put an unshielded audio cable in a hum field, forming and collapsing 60 times a second, it’s gonna induce a 60-cycle hum in the wire. You put a shield around it, and the collapse of the field induces current in the shield, which carries it to ground. The only effect you have on the wires inside the shield is that, when current is induced in the shield, a very tiny magnetic field forms around the shield; and when it collapses, it induces current flow into the wires. That’s what the shield is doing—it’s really draining off that field-collapse energy before it gets to the conductors in the wire.

Because of the nature of the shield, there’s current flow in it. We can say it’s at a state of charge, which means that it acts like one plate of a capacitor. Then there’s the outer jacket, then there’s the air around the outer jacket, and that air has moisture content and will pass current. You’ve seen lightning. Air is a rotten conductor, but it’s still a conductor. Therefore, the outer jacket will act like a dielectric for the capacitor consisting of the shield and the air.

Seull: Uhh, Roger, I imagine a lot of people are gonna start thinking you’re talking through your hat here...

Skoff: Do I care? There’s also a lot of people who say that all cables and all amplifiers—and probably even all speakers, for that matter—sound alike. The fact of it is that normally humid air, while a bad conductor, is still a conductor. And it doesn’t have to be a good conductor to be a plate, it just has to be at a state of charge different from that of the shield. Don’t forget: zero can be a state of charge as well.

Seull: Have you a way to prove or illustrate this?

Skoff: Actually, the proof of this whole thing is quite easy to demonstrate.

Seull: That’s good...

Skoff: Go to Radio Shack and buy the cheapest, nastiest interconnect you can find—something real, real cheap. Take an X-Acet knife and remove the outer jacket. Make a long slit connector-to-connector and around the jacket at the connectors so you can peel the jacket off in one piece.

Seull: I’m not about to jump down to my nearest Rat Shack!

Skoff: Do it! Trust me—it’ll really amaze you.

Seull: I’m already amazed. Pray continue.

Skoff: After confirming that the jackets will come off, put them back on and listen to the cables. Then pull the two jackets off and listen again. I promise you’ll be amazed at how much better they sound without the outer jackets. Everybody thinks that just because the jacket is outside the shield it doesn’t affect the sound. Au contraire! The jackets very definitely affect the sound, and that’s why, on our better cables, we use Teflon outer-jacketing, which nobody else does. And even on our cheapest cables we use Dupont Elvax or Surlyn because of these same considerations.

Seull: Whew! Well, thanks a bunch, Roger. You really said a mouthful! I know our readers will enjoy hearing about the basics of cables explained in “lay” terms.

Skoff: badaBOOM!

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At the tail end of a tribute-album boom that stopped just short of Afternoon Delight: A Salute to the Starland Vocal Band, it's easy to forget that this trend began with a series of albums imbued with taste, intelligence, and a good dose of daring. What else would you call Garth Hudson, Betty Carter, Aaron Neville, and the Replacements doing a medley of Disney songs?

The common thread behind these pre-trend tributes is producer Hal Willner (who may be better known as the musical director of Saturday Night Live). Willner was the auteur behind such albums as Amarcord Nino Rota, which features Deborah Harry, Carla Bley, Wynton Marsalis, and David Amram; That's the Way I Feel Now: A Tribute to Thelonious Monk, with NRBQ, Donald Fagen, Peter Frampton, Gil Evans, and Arto Lindsay; Lost in the Stars: The Music of Kurt Weill, with Lou Reed, Tom Waits, Sting, Aaron Neville, and Van Dyke Parks; Stay Awake: Various Interpretations of Music from Vintage Disney Films, with Bonnie Raitt, Los Lobos, Sun Ra, Michael Stipe, and Branford Marsalis; and Weird Nightmare: Meditations on Mingus, with Elvis Costello, Charlie Watts, Keith Richards, and Henry Rollins. He assembled these albums the old-fashioned way: one-on-one with the artists, and not through a close encounter with a fax machine.

Willner is currently producing Lou Reed's next album and finishing up a spoken-word disc featuring the stories of Edgar Allan Poe as read by the likes of Reed, Marianne Faithfull, and Gabriel Byrne. (He's also produced two volumes of Warner Bros.' The Carl Stalling Project—a musical history of the man who scored hundreds of classic Looney Tunes cartoons.) How is Willner able to turn out tribute records that sound like music and not like product? And what does he think of the trend that he started? That's what I wanted to find out.

Allen St. John: How did you get started doing tribute records?

Hal Willner: With the first two—the Rota and the Thelonious Monk record—I didn't mean to really do a series. They were sort of natural projects. It wasn't an entirely new thing. At the Newport Jazz Festivals, for years George Wein used to do Evenings of Duke Ellington music with different artists. And remember those Woody Guthrie Carnegie Hall concerts that came out in the '70s? Initially I just wanted to do an album of Nino Rota music—a Sketches of Rota with one artist—but somehow that didn't pan out. And when Rota passed away, I had this fantasy of Carla Bley doing 8½, Jackie Barr doing Amarcord, David Amram doing Satyricon, and William Fisher arranging a medley of I Vitelloni and Nights of Cabiria. The music was perfect for that sort of approach, but that was an extension of my original idea.

St. John: So it was initially going to be a low-profile project?

Willner: Initially. Then, while I was working on it—I have this office at NBC Saturday Night Live—Deborah Harry and Chris Stein came in, saw this Nino Rota paraphernalia, and told me how much they loved Rota. I was thinking about who would do La Dolce Vita, so it was a natural to ask them. It was originally a jazz-based record, but it changed with their presence on it. This was during the "Tide is High" period, so they were huge. And that got the album in all the rock press—attention that normally wouldn't have happened.

St. John: But you stayed away from the temptation of going for an all-star team.

Willner: I thought it was important to me to have a mixture of really established people and people you haven't heard of. It's a philosophy I continued with, which I don't think many other people are doing. On that Nino Rota album, it
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WorldRadioHistory
I came to music in the late ’60s and early ’70s, when a commercial FM station would play Dylan in the afternoon, Led Zeppelin in the early evening, then Hendrix or Béebheart, Orson Welles radio shows at midnight, and Ornette Coleman and Coltrane at two. That totally made sense to me.

was Bill Frisell’s first recorded appearance. It was one of Wynton and Branford Marsalis’s first sessions. Then there were veterans like Carla Bley, David Amram, and Steve Lacy.

St. John: Where did that Rota album lead?

Willner: That was my very first album—I was 24, 25—and I thought I was going to be getting more work as a producer. And when I would go to meetings and people would ask me what ideas I had, I had no intention of continuing with that type of record. In 1984, I attended a few tribute concerts for Thelonious Monk, who had just passed away, and I got really upset at the way his music was being treated.

St. John: Really parochial?

Willner: It was people like Oscar Peterson—people who didn’t belong there. I never considered Monk a jazz artist per se. If you look at his compositions, they’re structured like pop tunes. Some of the biggest Monk fans are not jazz musicians. I wondered, Why isn’t Donald Fagen here? Why isn’t NRBQ here? I had this idea of doing my kind of tribute to Monk. It’s the only album in the series that I would say is an absolute, true tribute record. The intention of the other ones was to try and make a great record. But I really wanted to do a proper tribute to Monk.

St. John: Was it easy to recruit people?

Willner: At that particular time, no one else was doing records like this. The record labels saw it as a feather in the artist’s cap, and for the artists it was a chance to do something new. I raised some money myself for the Monk, and I recorded four tracks on my own—one with Donald Fagen and Steve Kahn, one with NRBQ, one with Joe Jackson, and a session with Chris Spedding and Peter Frampton. A&M picked it up, and that album was pretty successful, especially in Europe, so people kept asking me, “Who’s next?” So it seemed like I had a series going.

St. John: Why did you choose Kurt Weill?

Willner: I wanted to learn about his music, which I wasn’t an expert on. And I thought his music would work with this kind of approach.

St. John: How would you describe your approach?

Willner: I produce all the sessions myself, work with all the artists closely, and end up with a record like the Weill record where you have Sting and Charlie Haden and Carla Bley and Marianne Faithfull and John Zorn and Lou Reed and Aaron Neville and Todd Rundgren and Van Dyke Parks—a mixture like that all playing a similar body of work.

St. John: A pretty eclectic group of artists. . .

Willner: To me it wasn’t that eclectic. When I started listening to records, it was the period of the Beatles’ White Album. And that went from hardcore to avant-garde to schlitz—with kind of its own little vaudeville. Like an Ed Sullivan show.

St. John: Do you see your records as being educational?

Willner: It can work on a lot of levels. A Sun Ra fan can pick up the album and hear the Replacements. And somebody can pick up an album to hear a particular artist and learn about the composer’s work. Classical, jazz, rock—I think all that stuff can exist in the same place. That’s where I came to music. I was lucky enough to catch late-’60s and early-’70s FM radio, where a commercial station would play Dylan in the afternoon, Led Zeppelin in the early evening, then Hendrix
Dances with Wolves
(without Arcam sound)

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or Beefheart or Velvet Underground; then they’d play Orson Welles radio shows at midnight, then Ornette Coleman and Coltrane at two. That totally made sense to me.

The ultimate thing is, I’m trying to make a really great listening experience—something that has a flow and a journey and takes you from here to there. Like the records that attracted me to record making—*Sketches of Spain, A Love Supreme*, the White Album.

**St. John:** Do you map out the records in advance?

**Willner:** I usually go into one of these records with five strong ideas, and I see where it goes. Then other ideas would come. People would get in touch with me on the right day, and just on instinct I would bring them into the project.

**St. John:** What were the five strong ideas on *Stay Awake*?

**Willner:** Ringo. The first idea I had was for “When You Wish Upon a Star,” based on “Goodnight” on the White Album. Sun Ra doing “Pink Elephants on Parade” was a definite. Harry Nilsson, “Zip a Dee Do Dah.” Yma Sumac doing “I Wonder”—that’s more than five—and Aaron Neville doing “Mickey Mouse.”

**St. John:** On *Monk*?

**Willner:** NRBJ doing “Little Rootie Tootie,” Carla Bley doing “Mysterioso,” Donald Fagen doing “Reflections,” Dr. John doing “Blue Monk.”

**St. John:** On *Kurt Weill*?

**Willner:** Sting’s “Mac the Knife”; Van Dyke Parks doing “Johnny Johnson”; Marianne Faithfull’s “Ballad of the Soldiers’ Wife” was a definite.

**St. John:** How has the tribute craze affected you?

**Willner:** I’ve been pulling back a bit. One of the reasons is that, when I started, no one was doing it. On the last album, we had trouble getting clearances, which was a new experience for me. You call the label and say, “I want Aaron Neville,” and they say, “He was on the Leonard Cohen one, and…” That’s a little odd.

**St. John:** What do you think about the other tribute albums you’ve heard?

**Willner:** Most of the [tribute] albums I’ve heard don’t interest me. They seem to be phone-in. They get people to do something, and then they hire their own production people. Some of them are all-indie. Some of them are all-superstar. I can understand that some of these records are made for charity, and that’s why they want to sell millions of records. But that’s not where mine are coming from at all.

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**MOST TRIBUTE ALBUMS SEEM PHONED-IN.**

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HI FI '96
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I can’t think of two products at further ends of the audio spectrum than a single-ended triode tube amplifier and a mass-market Home Theater loudspeaker. Single-ended tube amplifiers are about reproducing subtlety, delicacy, nuance, and communicating the music’s inner essence. Conversely, a Home Theater loudspeaker system—particularly one made by a mass-market manufacturer—would appear to put the emphasis on booming bass and reproducing shotgun blasts, with little regard for musical refinement.

What a bizarre marriage it was, then, to pair the new Infinity Composition Prelude P-FR loudspeakers with the Cary Audio Design CAD-300SEI 11W single-ended triode amplifier (reviewed elsewhere in this issue). This combination didn’t happen by accident; as you’ll see, these apparently disparate products are a match made in heaven.

I discovered the Infinity Preludes while surveying Home Theater loudspeaker systems for the upcoming second issue of the Stereophile Guide to Home Theater (published this month). In addition to evaluating the loudspeaker systems under review with video soundtracks, I assessed their musical qualities—or lack thereof. The Preludes were such a musical standout that I rescued them from the Home Theater room (where they had been powered by mass-market receivers and fed with a laser disc source) and gave them a new lease on life in the larger music room, with reference-quality source and amplification components. The Preludes’ extraordinary musical performance and unique design compelled me to tell you about how they performed in an audiophile-quality two-channel playback system.

Moreover, the Preludes, with their astounding 96dB sensitivity (2.83V/1m) and integral powered woofer, seemed an ideal load for a single-ended amplifier such as the Cary CAD-300SEI integrated amplifier. At $3395, the CAD-300SEI is also a good price match for the $3000/pair Composition Prelude P-FR.

So that’s the story of how my listening room ended up home to the two most disparate products imaginable.

**Description**

The Infinity Prelude represents a bold new approach to loudspeaker design. Created by Laurie Fincham (formerly of KEF) and his protégé Andrew Jones (also once with KEF), the Prelude is the culmination of an 18-month-long, ground-up development effort. Every driver and component in the Prelude was designed from scratch specifically for this product, with some design aspects pushing the envelope of what is possible in loudspeaker technology.

The Prelude was designed to combine simplicity of use, elegance, and good video soundtrack reproduction in a Home Theater loudspeaker system. Infinity has more than met those goals (see my review in the Stereophile Guide to Home Theater); but, perhaps more importantly, they created a loudspeaker that provided audiophile-quality musical performance at an affordable price.

The entire Composition Home Theater package consists of left and right loudspeakers with integral powered woofers (the Prelude Full Range, or P-FR), a center-channel speaker (the Prelude Center Channel, or P-CC), and a pair of surrounds (the Prelude Quadrapole Surrounds, or P-QPS). These components are available separately or as a $4448 package. I’ll just consider the $3000/pair P-FR left and right loudspeakers in this review.

The P-FR looks unusual, to say the least. The narrow but deep lower enclosure holds a side-loaded 12" woofer. A tall column containing the midrange and treble drivers rises from the woofer enclosure, making the column look a little like a stove pipe. A grille wraps partially around the column, covering the drivers without adding a diffraction-producing obstruction. With a width of only 7.5" at its widest point, the Prelude presents a low profile in the listening room. Nonetheless, the Prelude’s sleek, rounded contours and charcoal-gray

1 The P-CC basically consists of the center, sealed-box section of the P-FR turned on its side. As might be expected, other than lacking the low-frequency extension of the P-FR’s active woofer and having dispersion patterns rotated through 90°, we found its performance to be identical.

—JA
color make a bold aesthetic statement. It's difficult to overstate the Prelude's elegant and beautiful visual design—"wow" is often the response of visitors upon seeing it.

The enclosure is supported by feet that protrude from the woofer-cabinet edges. You can thread four smooth, flat glides into the feet to make the Prelude moveable, or insert spikes (supplied) for more permanent installations. Switches on the enclosure’s bottom rear panel adjust bass level in three increments, change the grounding scheme, and set the Prelude into automatic shutoff mode when no input signal is detected within 10 minutes.

A built-in amplifier drives the system's 12" woofer; you simply connect a pair of loudspeaker cables to the single pair of five-way binding posts. Because of this design, whatever amplifier is driving the Prelude needs power only the midrange and tweeter column. The amplifier is thus relieved of the burden of driving a large amount of current through the woofer's voice-coil. This is one reason why the Prelude is such an appealing load for low-powered tubed amplifiers.

**HIGH SENSITIVITY**

The main reason I acquired an 11Wpc single-ended tubed amplifier to drive the Prelude was, however, the speaker's extraordinarily high sensitivity. With its 96dB rating, the Prelude will play as loudly with the 11W Cary 300SEi as an 87dB-sensitive loudspeaker will play with 88W (see the sidebar).

This high sensitivity was achieved with several techniques. First, by using so many drivers (eight per enclosure), the overall radiating area was increased. Moreover, the four-way design allows each driver to be operated over a narrow passband, one where the driver is most sensitive. Second, the drivers represent a groundbreaking, one-year research effort into making a more efficient motor structure. According to Laurie Fincham, only about 25% of a conventional driver's magnetic energy gets into the voice-coil gap. The motor structure developed for the Prelude focuses the magnetic field so that 75% of the magnetic flux gets into the gap. When the voice-coil sits in a stronger magnetic field, it takes less current flow through the voice-coil to pull the voice-coil back and forth, and with it, the cone. Consequently, more of the amplifier power goes to producing sound, and less power is wasted heating the voice-coil.

Surprisingly, the Prelude's single-dome tweeter can keep up with six highly sensitive midrange drivers and a powered woofer. In fact, the tweeter is actually more sensitive than are the other drivers; it's padded down to match the other drivers' output levels. The tweeter uses a shielded Neodymium Iron Boron magnet structure, and is horn-loaded by an "elliptical waveguide" molded into the front baffle. The waveguide increases the tweeter's sensitivity, allows a lower crossover point, and controls the dispersion.

**INSIDE THE PRELUDE**

Each midrange column contains seven drivers in a line array: four 5.25" lower-midrange units, two 4" upper-midrange drivers, and one 1" soft-dome tweeter in the middle of the column. The Prelude is thus a four-way loudspeaker (including the single 12" woofer). The lower-midrange units use stiffened paper cones (plastic was too heavy to achieve the sensitivity goal), and the upper-midrange diaphragms are made from polypropylene. Crossover frequencies are 110Hz, 350Hz, and 3kHz, with varying slopes. The 20-liter column is high-pass-filtered at 110Hz with a fourth-order slope, and the woofer is high-pass-filtered at 15Hz with a first-order slope. Two small ports at each end of the column provide reflex-loading of the midrange drivers.

Although the column contains seven drivers, it's barely wider than the 5.25" lower-midrange units. This narrow profile confers the advantages of low diffraction, wide dispersion, and excellent imaging; it's no coincidence that minimonitors and other narrow-baffle designs disappear more easily into the soundstage than do large boxes.

The column is made from ¾" extruded aluminum with a steel baffle. The unusual rounded back discourages the formation of standing waves and makes the enclosure less resonant. A charcoal-gray paint finishes the column.

An 18-liter sealed woofer enclosure houses the Prelude's side-firing 12" drive-unit. The woofer features a massive, 70-oz magnet in a diecast frame that uses the same focused field structure as that used in the midrange drivers and tweeter. The cone material is Infinity's IMG (Injection Molded Graphite), a blend of damped polypropylene and graphite fibers. IMG, used in Infinity's IRS Beta and Epsilon woofers, reportedly provides high rigidity, low mass, and high output without distortion.

Loading a 12" woofer in such a small enclosure puts the resonant frequency very high—in this case, 85Hz. To extend the bass response, the woofer's integral power amplifier is equalized to provide flat response (the system is down 2dB at 35Hz, -6dB at 25Hz). The woofer amplifier power isn't specified, but the Preludes each draw a maximum of 300W from the AC outlet [meaning the woofer amplifier probably produces around 100W—Ed.].

The Prelude is a bold effort that rethinks some of the accepted wisdom of loudspeaker design and aesthetics. This was clearly a pioneering design effort that attempted to break free from the
traditional loudspeaker paradigms. Moreover, the execution was first-rate—the build quality and finish detail are superb.

**SYSTEM**
I auditioned the Composition system as an entire Home Theater package (with the matching center-channel and surround loudspeakers) with three A/V receivers and one A/V power amplifier: the Onkyo TX-SV919THX, Yamaha RX-V590, Pioneer VSX-D704S, and the Arcam Xeta One, respectively. For pure music-listening, I drove the Preludes in my music room with Audio Research VT150 tubed monoblock power amplifiers and an Audio Research LS5 Mk.II preamp. The digital front-end was a Mark Levinson No.31 Reference CD transport feeding the Spectral SDR-2000 Pro processor (HDCD®-equipped) via the excellent new Kimber/illuminati coaxial interconnect. LPs were played on a highly modified Well Tempered Turntable and WTA, fitted with an AudioQuest AQ7000nx cartridge. The WTA has undergone a total rebuild by Larry Pederson, which dramatically improved the musical performance of this already excellent arm. A Marigo Well-Damped Arm Clamp, Marigo Suspension System, Marigo Mat, and other tweaks further improved the sound of the analog front-end. The turntable sits on a 350-lb, lead-shot-filled Merrill Stable Table. The phono preamp was the unsurpassed Vendetta Research SCP-2B connected with Monster Sigma and Magnan Type V interconnects. Other interconnects were AudioQuest Lapis and Diamond x3, and loudspeaker cables were AudioQuest Dragon II.

Most of my listening time was, however, with the Cary CAD-300SEI single-ended tubed amplifier with the same source components and interconnects.

2 Larry Pederson of LP Lab can be reached at (510) 799-3858.

**LISTENING**
In the following description of the Prelude's sound, you won't find any qualifications such as "The Preludes were superb for a Home Theater loudspeaker." Once the Preludes were moved to my music room, I judged them by the highest audiophile standards.

First, the Prelude had an exceptionally smooth, uncolored sound. Its lack of bass boost and refined—even polite—treble produced a sophisticated, understated sound. This wasn't a loudspeaker that called attention to itself; instead, the Prelude got out of the music's way and reproduced the signal with very little editorial interjection. The Prelude made the music rather than the loudspeakers the center of attention. The Prelude's treble was clean and detailed, yet not aggressive or etched. It struck a perfect balance between treble resolution and smoothness. The result was an ability to hear lots of fine musical detail without listening fatigue or feeling that my ears wanted to close. The treble refinement and lack of etch seemed to invite me into the music rather than keep me at arm's length. In addition to being well-balanced with the rest of the spectrum, the Prelude's treble lacked grain or metallic brittleness. Cymbals had just the right degree of sheen and air, and weren't overlaid with the "spray can" white-noise-like sound produced by some tweeters. Similarly, vocal sibilance was less spitty and intrusive than I've heard from many loudspeakers. In this regard, the Prelude's treble balance and cleanliness approached the performance of ribbon drivers.

Some listeners may, however, find the Prelude's treble too polite, particularly when driving them with smooth-sounding tubed amplifiers. Fortunately, you can simply toe-in the Prelude slightly for a brighter presentation and increased sense of immediacy. I did all my auditioning either with no toe-in (with the ARC VT150s) or just a little toe-in (with the Cary CAD-300SEI), which ameliorated the Cary amplifier's lack of top-octave air. That's another reason why the Prelude is ideal for single-ended tubed amplifiers; you can dial-in nearly any treble balance you want to compensate for tubed amplifiers' sometimes rolled-off trebles.

This smooth and refined treble was matched to a remarkably uncolored midband. Vocals had an open and unfeathered quality that made them seem to exist completely outside the loudspeakers. There was no trace of nasality, conge-ss, honk, or a hooty quality. In addition to the lack of midband coloration,

**HOW INSENSITIVE**
Many consumers shopping for hi-fi equipment focus on the amount of amplifier power they get for their dollar. The number of watts per channel a given amplifier can deliver to a loudspeaker is often considered an indicator of how loudly the system will play without distortion.

Although amplifier power is important, there's another crucial—and often overlooked—factor that determines your system's ability to provide satisfying volume and dynamics: loudspeaker sensitivity.

A loudspeaker's sensitivity (sometimes erroneously called "efficiency") is a measure of how much acoustic output the loudspeaker provides for a given input voltage. A typical loudspeaker specification may read "86dB spl 2.83V/1m." This means that the loudspeaker produces a sound-pressure level (spl) of 86dB measured 1m away with an input voltage of 2.83V.

Every time we double amplifier power we get an increase in sound-pressure level of 3dB from a given loudspeaker. Similarly, every 3dB increase in loudspeaker sensitivity produces 3dB more sound for the same amplifier power. Consequently, a 3dB increase in loudspeaker sensitivity is equivalent to doubling the amplifier power driving it.

This relationship has real-world consequences. Compare the amplifier power required to reach a certain volume of sound with an 84dB-sensitive loudspeaker and a loudspeaker with a sensitivity of 96dB, such as the Prelude. The high-sensitivity loudspeaker driven by 10W could produce the same sound-pressure level as the low-sensitivity loudspeaker driven by 160W, all other factors being equal.

The importance of loudspeaker sensitivity was highlighted by an interesting demonstration conducted in 1948 by loudspeaker pioneer Paul Klipsch. He compared the sound of a symphony orchestra with that of his whopping 105dB-sensitive Klipschorn loudspeaker—at full concert levels. His amplifier power? A whole 5W! When you're shopping for loudspeakers, take a closer look at loudspeaker sensitivity—you could save yourself the expense of a higher-powered amplifier. —Robert Harley

1 Sensitivity specifications can also refer to a drive signal of "1W 2.83V being equal to 1W power being fed to an 8 ohm loudspeaker. Note that 283V across a 4 ohm loudspeaker means the loudspeaker is being driven by 5W, making the loudspeaker appear to be 3dB more sensitive than it actually is. If the drive voltage is kept constant at 2.83V and the impedance is halved, the current flow doubles and, by Ohm's law, the power consumption is doubled. You should thus look closely at sensitivity ratings rather than rely on the single sensitivity number.
The Prelude had a wonderful transparency that allowed me to hear deep into the soundstage. The speaker was highly resolving of midrange detail, easily revealing the differences between digital interconnects, for example.

Although the Prelude was highly resolving of the signal fed it, they were never etched, analytical, or "рутlessly revealing." Instead, the detail was presented in a natural, gentle way that produced a tremendous sense of musical ease and refinement. When auditioning the Prelude as a Home Theater loudspeaker, I was struck by how smooth the bass sounded. Most Home Theater loudspeakers have a sluggish boom in the lower bass and a lack of articulation in the midbass. Not the Prelude: it had an extraordinarily well-defined and detailed bass, with no hint of boom or bloat.

Acoustic bass was particularly well-served by the Prelude; I could hear detail and nuance often smeared by lesser loudspeakers. Consequently, I found myself greatly enjoying virtuosic bass performances—such as Eddie Gomez's playing on Chick Corea's Friends (Polydor 849 071-2), or his work on Steps Ahead's eponymous debut record (Elektra Musician 60168-2). The Prelude's superb pitch definition and bass articulation were significant factors in my enjoyment of music through it.

Moreover, the bass was seamlessly integrated with the lower midrange. Descending or ascending piano lines that crossed the transition showed no discontinuity or change in character.

The bass was also deep and extended but didn't stretch into the lowermost octaves with the authority I'm used to from the mighty Genesis II.5s. The organ pedal tones on Timothy Seelig's and the Turtle Creek Choral and Women's Chorus of Dallas's performance of Rutter's Requiem (Reference RR-57/CD) were audible, but the lowermost tones (16Hz) were rolled-off. Nonetheless, the bass extension was deeper than you get from most $3000/pair loudspeakers.

Although the bass was highly articulate, it was on the lean side. Rather than sounding weighty, full, and authoritative, the bass was tight, polite, and refined. I much prefer bass quality to bass quantity, but I would have liked a little more visceral impact and weight from the Prelude. Note, however, that I had the Prelude in a 21' by 18' room, well away from the rear and side walls (and with the woofer-level switch in the "high" position). When placed closer to room boundaries (as I used them in the Home Theater room), the Prelude had greater authority and bass power. Nonetheless, you wouldn't think the Prelude's bass was produced by a big woofer in a reflex enclosure with an underdamped alignment.

The Prelude had a tremendously "quick" bass, with no overhang or smearing. Kickdrum had a "sudden" quality that made it jump out from the presentation and stop as quickly as it started. This quality, coupled with the articulate midbass, combined for a tight, quick, and punchy bottom end.

The rest of the spectrum had similarly impressive dynamics. The snare drum on Michael Ruff's Speaking in Melodies (Sheffield CD-35), for example, had a huge sense of snap and impact—particularly with the ARC VT10/5s driving the Prelude. The overall dynamic contrast was exceptionally wide: the Prelude could play loudly without congestion and resolve fine detail during quiet passages. Moreover, transients were reproduced with razor-sharp leading edges, with no smearing or dulling of transient detail. Microdynamic detail was also impressive: I could hear precisely where each instrument or voice was in the soundstage, and images were highly focused, tight, and compact, making the presentation sound like a collection of individual instruments in three-dimensional space. There was also a remarkable stability and transparency to the images, further heightening the impression of instruments before me. Moreover, the Prelude completely disappeared into the soundstage, giving no clue that the sound was being reproduced by two spaced sources. Soundstage depth was also impressive, with both a sense of distance and gradations of layering. The Genesis II.5s had, however, a larger overall soundstage size (width and depth) and presented more bloom and envelopment in the acoustic surrounding the instruments. The Preludes tended to sound smaller and more intimate, with less air at the soundstage edges.

As a result of these specific sonic attributes, I greatly enjoyed music through the Preludes—particularly with the Cary 300SEI. Even with my standards set by the $37,000 combination of the Genesis II.5s and Audio Research electronics, the $6395 Prelude/Cary pair was intensely involving musically.

Although some of the credit goes to the Cary single-ended amplifier, the Preludes were able to communicate the quality of the recordings and source components—and, consequently, communicate the music. In addition, I heard many of the qualities described when auditioning the Prelude with mass-market audio/video receivers for the Stereophile Guide to Home Theater. Although the A/V receivers didn't provide the treble purity and soundstaging I experienced with the tube electronics, I still heard the Prelude's uncolored tonal balance, excellent bass articulation, and wide dynamics.

With the Cary CAD-300SEI, the Prelude produced completely satisfying playback levels. It's amazing what 11W will do with a 96dB—sensitive loudspeaker (and a powered woofer). This combination was absolutely magical, bringing the purity of single-ended triode amplification to an uncolored, audiophile-quality loudspeaker and providing bass performance that wasn't dependent on the tubed amplifier. The Preludes are the load for low-powered tubed amplifiers.

My only reservation is that you may not be able to audition the Preludes under ideal conditions—they're sold primarily by mass-market stores rather than by specialty-audio retailers. Although they sounded good in the Home Theater system, they didn't really sing until they were optimally set up in the larger music room and driven by top-notch source and amplification components. Once the word gets out about how the Preludes sound with single-ended tubed amplifiers, I suspect more high-end dealers will carry the Preludes. Then you can audition them in their full glory.

**Measurements**

A performed the measurements, supplying me with the results after I had finished my auditioning. The Prelude's B-weighted sensitivity measured 95.5dB—slightly lower than the claimed 96dB figure. Still, 95.5dB is an amazingly high sensitivity, particularly for a loudspeaker as flat in response as the Prelude (as we'll see later). Looking at the impedance-magnitude and phase-angle plots (fig.1), we can see that the Prelude's impedance is closer to 5 ohms nominal than the specified 6 ohms nominal. The impedance dips to 4 ohms (at 1.2kHz) and is less than 6 ohms across most of the band.

The rapidly rising impedance below 100Hz, accompanied by the negative (capacitive) phase angle, is caused by the
series capacitor that forms the high-pass filter on the midrange/tweeter column (the woofer is self-powered). The impedance peak at 150Hz is the midrange/tweeter column's tuning. A slight wrinkle in the impedance-magnitude plot just above 500Hz could be caused by a cabinet resonance. JA, who performed the measurements on the Prelude, noted cabinet resonances at 120Hz, 155Hz, 200Hz, and strong vibrations at 305Hz and 530Hz. I didn't find any of these resonances to produce audible coloration, however.

Although the 5 ohm nominal impedance suggests that the Prelude is a more difficult load for an amplifier than I had guessed from the auditioning, the benign phase angle makes the speaker look more resistive than reactive through most of the band—a benefit for single-ended tubed amplifiers. Moreover, the impedance is fairly constant with frequency, which reduces impedance interactions when driving the Prelude with a high-output-impedance amplifier such as the Cary CAD-300SEI. Amplifiers with low output impedances won't exhibit these frequency-response deviations. Overall, the Prelude is, on paper, a little more difficult to drive than I would have guessed from my experience with the 11W 300SEI. Its extraordinarily high sensitivity and powered woofer no doubt make up for the lowish impedance.

Fig.2 is the Prelude's frequency response measured on the tweeter axis and averaged over a 30° window. The most striking aspect of this curve is the astonishingly flat response through the midband and treble. Loudspeakers don't come any flatter than this. The apparent peak between 100Hz and 300Hz may be a measurement artifact. When JA made the measurements, he calculated the overall nearfield LF response by combining the outputs of the four drive-units and eight ports reproducing much the same signal. He doesn't swear, therefore, that the upper-bass peak in the measurement is real. I suspect this is the case, both from my auditioning (if anything, the speaker sounded lean between 100Hz and 300Hz) and from Infinity's specification of 35Hz-20kHz +2 dB.

The woofer response in fig.2 confirms the specified -6dB point of 25Hz. We can see the woofer breakup modes (the peaks at 250Hz and 350Hz), but this occurs well beyond the woofer's pass-band. Finally, the woofer rolls off very rapidly (30dB/octave), probably to get it well-attenuated before the breakup modes.

The other interesting feature of fig.2 is the top-octave rolloff of nearly 5dB at 20kHz. I noted in the auditioning that the Prelude tended to have a smaller, more tightly defined stage rather than a huge, billowy presentation. A top-octave rolloff tends to reduce a loudspeaker's sense of "air" and extension rather than affect the tonal balance. The "brightness" region is not in the top octave but in the two lower octaves (2.5kHz-5kHz and 5kHz-10kHz). Note, however, that this measurement was made by averaging the response over a 30° horizontal window. The measured on-axis response was flatter above 10kHz.

The Prelude's measured response correlated closely with the listening impressions—particularly the even octave-to-octave balance, extraordinarily flat midband and treble, and slightly rolled-off top octave.

For comparison, fig.3 is the measured response across a 30° lateral window of the P-CC center-channel speaker derived from the P-FR. Very similar to the response of the P-FR, the P-CC lacks a little bit of energy in the presence region due to the off-axis contribution to this curve. On the tweeter axis, the P-CC measured as flat as the P-FR.

Fig.4 is the Prelude's horizontal response family, which shows how the loudspeaker's response changes off-axis. The straight line is the normalized on-axis response—it does not represent the P-FR's actual response [though it comes close—Ed.]. The other curves in fig.4 show just the deviation from the on-axis curve. The Prelude's narrow baffle naturally confers excellent dispersion, as seen in the flatness of the off-axis curves. Past 10° or so off-axis, however, the response drops rapidly above 10kHz, largely due to the "elliptical waveguide" molded into the baffle around the tweeter. (This limited top-octave dispersion made its presence known in fig.2, which was an average of the Prelude's response over a 30° window, by contributing to the apparent rolloff above 10kHz.) Again, this behavior corresponds.
to my impression of a polite treble and lack of air, particularly when the Prelude was driven by the 300SEI (which has its own treble rolloff).

The vertical response finally (not shown) shows virtually no change in tonal balance as a function of listening height between the P-FR's two midrange units. You can sit in any normal-height listening seat and the sound will be the same. [Sit too high or too low, however, and suckouts appear, due to the use of spaced drive-units handling the same frequency ranges.—Ed.]

Turning next to the time domain, fig.5 is the Prelude's impulse response measured on the tweeter axis. The system is obviously not time-coherent, although the midrange and tweeter are connected with the same polarity. The more illustrative step response (fig.6) shows the tweeter (the first negative-going spike) followed by the upper-midrange drivers (the second negative-going spike), and finally the woofer and lower-midrange drivers (the large, positive-going hump).

Fig.7 shows the Prelude's cumulative spectral-decay, or waterfall, plot, uncorrected for the measurement microphone's 15kHz peak. The decay is fast and clean, which correlates with good resolution of detail and transient response. There is some delayed resonant energy present at 3550Hz, but this is very minor. Overall, the Prelude's waterfall plot is superb. The P-CC speaker's waterfall behavior was similarly excellent.

In addition to sounding great, the Prelude had excellent measured performance—particularly its flat on-axis response and outstandingly clean waterfall plot.

**CONCLUSION**

The Infinity Composition Prelude P-FR loudspeaker is a stunning musical, technical, and aesthetic achievement. Even without its high sensitivity, the Prelude's smooth and uncolored tonal balance, wide dynamic contrast, articulate bass, and wonderful soundstaging would make it a standout. But with its ability to be driven to satisfying levels using an 11W single-ended triode amplifier, the Prelude becomes the loudspeaker for such amplifiers. Indeed, the $6395 Cary CAD-300SEI/Prelude combination was one of the most musical-sounding systems I've heard—regardless of price.

It is difficult to criticize the Prelude at its bargain price of $3000/pair. I've heard high-end loudspeakers costing more than twice the Prelude's price that didn't provide anywhere near this level of musical performance. Nonetheless, I found the bass balance a little on the lean side in my large room—a little more weight and authority would have been welcome. In addition, the polite treble contributed to less sense of air, which made the soundstage less expansive than that heard from many loudspeakers.

My descriptions of specific aspects of the Prelude's performance throughout this review don't tell the whole story. What I want to leave you with is how greatly I enjoyed music through the Prelude, particularly with the Cary 300SEI. I experienced many transcendental musical moments with this moderately priced combination.

The Infinity Prelude is worthy of my highest recommendation. In fact, I gave them the ultimate vote of confidence: I bought the review samples.
The Sears guy came to our basement the other day to check out the water heater. Staring at the walls of LPs and taping through the piles of CDs strewn on the floor, he exclaimed, "What the heck are you? A disc jockey?" So I told him.

"Yeah, I finally broke down and bought a CD player a couple weeks ago," he continued, completely forgetting about the water heater. "But I think something's wrong with it." "Why?" I asked. "Well, I'm a big Roy Orbison fan, and so the first thing I bought was a Roy CD and it don't sound like Roy. I know Roy's voice. I see him a million times—and it don't sound like him."

By this time he'd plodded himself down in the E-ticket listening seat and was so mesmerized by the scene that, if the water heater had blown right then, he'd probably have looked up and said, "Hey, you better call somebody in to look at that." "There's nothing wrong with your CD player," I assured him. "You're just a discerning listener. Let me play you some Roy on an old-fashioned record and you tell me what you think."

So I played him "Only the Lonely," from a green-and-gold-label second pressing of Roy Orbison's Greatest Hits (Monument SLP 18000). Now, if you want to talk about records worth expecting for, how about a copperswirl-label first pressing? I've never even seen one.

Anyway, I played him the track. He turned around with a look on his face like he'd just seen a ghost—which pretty much sums it up—his jaw came up off the floor, and he said, "Unbelievable!" Twice. "I've never heard anything like that. That's a regular old record?"

I was expecting that reaction, but not what happened next. He got up and walked right past the Audio Physic Virgos, which were about 6 feet away from where he was sitting, and headed to the back wall, where I'd parked my 7-foot-tall Eminent Technology VIs. "These things are unbelievable! I've never heard loudspeakers that sound like that. They don't even look like loudspeakers!"

The Virgos do look like loudspeakers. They have no grillecloths, so a pair of very conventional-looking tweeters and midrange drivers, music spewing from them, were staring this guy right in the punim, and he thought the sound was coming from the big black room dividers against the wall. Amazing. "Those weren't playing," I explained. "The ones staring you in the face were."

"Unbelievable!"

The Virgos flat-out disappeared. Better than other speakers that disappear? Better than the ProAc Response 2s I reviewed a few years ago, which also pull a vanishing act? I don't know. Different room, different equipment, different time. Better than other speakers reviewed on these pages for which disappearance is claimed? I can't say. No reviewer gets to hear it all.

Clearly, the Virgos disappeared, leaving one of the most credible three-dimensional soundstages I've ever experienced in any of my listening rooms over the years.

**Virgo**

At just under $5000/pair, the Virgos will also make a healthy chunk of your bank account disappear. At first glance this German-made speaker doesn't look like it could be worth that kind of money. It's a skinny runt, narrow and tall—like a minimonitor with a pituitary problem. In fact, the Avanti ($7500/pair), the next speaker up in the Audio Physic line, is a minimonitor, inserted into a square hole in a tall skinny box—a box with two small, side-mounted, floor-level woofers built in.

The Virgo is of one piece: while the two sets of binding posts on the Avantis are separated by a couple of feet, the Virgo's are more conventionally spaced 1 foot apart. The Virgo stands about 41 inches tall, 6½ inches wide, and 16 inches deep. The width: height ratio makes them appear taller than they really are.

As with Ken Kantor's NHT designs, the objective with the Virgo was to reduce diffraction with a narrow frontal area, preserved throughout the frequency band by side-mounting the bass drivers. While the NHT 3.3s sport a single, 12-inch acoustic-suspension woofer mounted at the back side of the very deep cabinet, the Virgo design utilizes a pair of front-ported (near the floor), 6½-inch-doped-paper Vifa woofers—one on each side of the cabinet mounted about 1½ inches off the floor and close to the front of the box, and custom-built to Audio Physic's specs.

Designer Joachim Gerhard introduced this basic configuration six years ago with the original Virgo. The version under review here, introduced at the January '95 Winter Consumer Electronics Show, features new drivers, a reworked crossover, and woofers placed closer to the floor. As with the 3.3s, the Virgo's tall, narrow design would be unstable without help down below; it comes standard with a thick, heavy MDF base fitted with spikes. I auditioned the speakers with the optional metal outrigger spiked feet, which, like those on the 3.3s, screw into...
the bottom of the cabinet at a 90° angle, thus widening the footprint and raising the cabinet a few inches off the floor.

Gerhard crosses the woofer s over at 350Hz to a 4" treated-paper Vifa midrange driver—a standard design with a modified voice-coil—which in turn is crossed over at 3.5kHz to a ¾" aluminum-dome tweeter. The dome is anodized on both sides to give a very thin layer of aluminum oxide. According to Gerhard, the tweeter is unique—fabricated from a combination of technologies bought from different companies and decoupled from the baffle via three elastomer plugs instead of screws or bolts.

The mid- and high-frequency drivers are stacked close together near the top of the thick, matte-black, radiused MDF baffle. The baffle format is duplicated on the rear of the cabinet, forming a neat-looking sandwich filled, in the case of the review sample, with a nourishing-looking bird’s-eye maple veneer on all four sides. The importer informs me that this subtle finish will be available in limited quantities at a premium.

German loudspeakers are renowned for their accomplished cabinet construction, and the Virgo is no exception: the quality of the woodwork, the fit ‘n finish, and the integrity of the box are first-rate—as it had better be in a luxury-priced compact design such as this. The Virgo is sleek and attractive (though no match for Italian cabinetry) from every angle—though ironically, least so from the listening position, where it’s all black-faced and businesslike.

The twin-circuit-board crossover is mounted directly behind the double set of binding posts on the inside of a removable panel cut out of the back baffle. I removed the six hex-head screws to take a look at the guts but didn’t get far because of the short lengths of wire between the drivers and the boards.

What I could see was a simple, circuit-board-mounted, three-element bass crossover—a 22µF electrolytic cap; a 3.3 ohm, 5W power resistor; and a small copper-coiled inductor—wired to the lower set of binding posts. Above was a larger, 12-element mid-HF crossover board with three large 100µF electrolytic caps, three small copper inductors, three smaller caps, and a pair of power resistors. Both boards were screwed to the panel via nylon standoff s; the space between was filled with damping material.

Many of the components, and two lengths of wire running from the binding posts to the board, were damped with globs of epoxy. Those wires, and the ones connecting the drivers to the crossover boards, were laughably thin—22-gauge or thinner. Laughable, as in imagining audiophiles hooking up their garden-hose cables to the binding posts, not knowing that lurking on the other side was anoxelia cables. When I asked Gerhard about the wire, he told me it was a proprietary, extremely stiff solid-core cable that he chose on the basis of sound, not looks. That was obvious from looking at it—no “politically correct” designer would choose that capellini on the basis of looks!

Also noticeable in the box was a copious amount of damping material. Not visible were the five tuned chambers through which the woofer’s back wave has to travel to get to the port. Each chamber in the Virgo has a unique higher-pitched resonant frequency. The port scheme was designed to both break up the cabinet’s natural one-frequency free-air resonance and add bracing.

In addition, the midrange and tweeter are isolated from their own specially damped triangular chamber via a wooden member angled from right below the midrange unit to the rear upper corner of the cabinet.

If the massive, gleaming, black NHT 33 is a V-8-equipped American muscle-car speaker, the Virgo is a Porsche 911. I thought to myself as I secured the chromed feet to the bottoms of the cabinets. As I wrote in my review of the 3.3 a year ago, for this kind of money the holes should be fitted with threaded inserts (NHT now includes them).

**ASSOCIATED EQUIPMENT**

For most of my listening the analog front-end consisted of a VPI TNT turntable with all the latest updates, including the Flywheel, fitted with either a Rockport Capella air-bearing linear tracking arm or the Graham 1.5t with ceramic armtube. The cartridge was either a Clavis DC or a Dynavector XX-1L. The table sat on a Bright Star Audio Big Rock TNT isolation platform, which rested on a TNT stand fitted with lead shot and sand. I also listened on the Rotel RP-900 tunable/Sumiklo Blue Point combo.

The digital source was an EAD T-7000 transport/DSP 9000 Mk.III (with HDCDP) combo. Preamps included an Audible Illusions Modulus 3 tweaked with Marigo dots and an Audio Research SP-11 Mk.II—an oldie but a goodie. The Rotel/Blue Point fed either the Creek OB1-8 or an Audio Alchemy VAC-in-the-Box.

2. A real flywheel, with genuine inertia—not a dental-floss-driven one that can be stopped with the pinch of a child’s finger. Does this mean war, J-10?

I drove the Virgos with a variety of amplifiers, including my reference VTL 300s, the outstanding Belles OCM 500, the latest version of the Muse 100, the Aragon 4004 and, just for fun, a vintage, 30Wpc Pilot 264 tube amp.

Cabling consisted of XLO phono, Yamamura Systems Millennium 5000 interconnect between amps and preamp, A.R.T. and XLO Signature speaker cable, and A.R.T. interconnect between the EAD 9000 and either preamp. I used AT&T glass and either Yamamura 5000 or WireWorld Gold Starlight digital cable between the transport and the processor. AC cords included WireWorld, A.R.T., TARA Labs, and Transparent Audio.

Accessories included Shakti electromagnetic stabilizers on top of electronics and both Harmonix feet and A.R.T. Q-Dampers under them. And, just to destroy my credibility with some of you, I kept the Coherent Technology clock (the original and still the greatest) plugged-in to the hospital-grade jacks of the dedicated AC line I use for the “front-end” components. Digital components were plugged-in to a Power Wedge line conditioner. Amplifier AC was from another dedicated line with hospital-grade jacks.

Room treatments included Harmonix RFA-78 Room Tuning Devices, ASC Tube Traps, and a Japanese violin-maker who, after about an hour of walking around and scratching an aluminum disc, poked a series of holes in my ceiling with an ice pick. This had a profound effect on the sound of my room—a positive one—which I hope to report to you in greater detail soon. A vintage-violin dealer’s audition room in the Carnegie Hall office building was also so treated, and musicians who were unaware of it and couldn’t see anything different commented on how the room sounded so much better for some reason.

The Modulus 3 is a wonderful piece of gear—I own it, and I’ll review it here soon; but it doesn’t do an outstanding job controlling the bottom end, and so is not of reference quality in that area. I thus found it impossible to use the Modulus 3 to assess the bass control of the Virgos. The Audio Research SP-11 does a better job there, so I was confident that I was hearing the Virgo’s bottom end and not that of the electronics.

**CINERAMA SETUP**

When was the last time you heard someone tell you to set your speakers up along the long wall of your listening room? In Joachim Gerhard’s view of things, the long wall is the way to go. What’s more,
he wants his speakers set up in the middle of the room and your listening position dead against the back wall. "What about room-boundary bass reinforcement? What about slapback echo?" I hear you cry.

According to Gerhard, while American hearing research is keyed on amplitude recognition and frequency response, European research has focused on another aspect of hearing—one pretty much overlooked in the US. As we all know, aging takes its toll on our ability to hear high frequencies, because, as with the rest of us (well, with one exception for guys), our parts stiffen over time.

This other property of hearing is involved in "event" identification and image localization. A direct nerve-link between the anvil, stirrup, oval window—the drum-like membrane that pushes fluid against the cochlea—and brain tells us that an event has occurred. This "event" information reaches the brain in 14-20 microseconds. By comparison, it takes some 80 milliseconds for us to identify a sinewave pitch. According to Gerhard, this "something's happened" aspect of hearing is basic to, and far more crucial in determining, evolutionary survival than is pitch identification, which is almost a luxury by comparison.

By comparing new sounds to aural memories, the brain establishes whether the event is glass breaking or a twig snapping; then, based on differences in arrival time at each ear, it determines the event's location. Thus, the brain plays a much greater role in our hearing, and in the "believability" factor in sound reproduction, than we previously understood.

Good news, old-timers: this ability does not deteriorate with age. In fact, over time we become more accomplished listeners as the brain sets up more patterns of texture recognition. For example, as children, we may learn to distinguish the sound of breaking glass from breaking plastic. Later we may learn to distinguish a lightbulb breaking from a pane of glass breaking.

This form of pattern-recognition hearing is said to extend far beyond 20kHz and helps explain why we can sometimes "sense" the absence of ultrahigh frequencies. Is that why our quiet listening rooms grow even quieter when we shut down our systems—particularly our digital components?

Our ability to localize events is thought to be good to within inches throughout about a 6' radius. Is it any wonder moving one speaker an inch relative to the other causes us to hear profound spatial differences?

This research profoundly affects Gerhard's speaker designs, cone material choices, and placement strategies. With the concept of "event identity" fixed in his mind, Gerhard went about choosing materials for his cones. His use of paper for the woofers and midrange drivers and his crossing over to the tweeter at 3.5kHz are choices predicated on this research.

The "event" of paper generating musical soundwaves is more natural than moving plastic or some other synthetic, he contends. Gerhard literally sat around listening to various cone materials by dropping them from a distance onto a table and listening to the "event." Gerhard told me that paper is very efficient and offers higher resolution than plastic.

The problem with paper is one of control—of shaping and damping it to behave properly. The paper-cone midrange driver used in the Virgo has a special S-shaped surround that helps it to perform flat out to 10kHz. The 3.5kHz crossover was chosen because it's near the highest note produced by the violin. The metal-dome tweeter therefore handles overtones and not fundamentals.

UP AGAINST IT

So, why does Gerhard want you to sit with your back against the wall? The wall is a node—where pressure is highest and velocity lowest—where you'll feel maximum bass pressurization. That's basic, and that's why putting speakers against a wall generates maximum bass. Unfortunately, putting speakers against a wall is not ideal for other reasons—like for generating a three-dimensional soundstage. So, better to put your head against a wall.

Those who suggest that the reflection off the rear wall will confuse imaging are incorrect, according to the Haas primacy effect, which demonstrates that the ear prefers the direct wave over the reflected and can only process the time delay between the direct and reflected sound when the distance is greater than the circumference of your head, which is about 2'.

If that seems like only watermelon heads are involved, get out your tape measure—we're all a bunch of fatheads. So as long as you sit closer than 2' from the back wall, the earbrain will not process the reflection, giving preference to the direct sound from the speaker; though, of course, if your back wall is glass, it will for other reasons affect what you hear. Clearly some treatment of the back wall will be of some value.

With you sitting against a wall, where is the best location for maximum bass pressurization? According to Gerhard, at the room's exact halfway point, with the speakers against either side wall. That's the second node. The next best position is at the quarter point in the room in both axes.

In fine-tuning the room for both frequency response and imaging, Gerhard first divides the room into two grids. One is even divisions—halves, quarters, sixteenths, which represent reinforcement nodes; the other is odd—thirds, sixths, ninths, which represent cancellation nodes. These measurements should be done to the inch with a tape measure and not be guessimates. Ideally, you'd draw out each grid in a different color and overlay the two.

If your room is such that you can put your speakers at the halfway point in the room with the speakers against the side walls, the next move would be to move them laterally closer together to the quarter point on each side. That would be your ideal starting point for maximizing bass pressurization and creating a credible soundstage.

Now begins the battle of optimizing imaging and frequency response. If bass is too strong, you could go to an anti-node that could either be forward or back or side to side to one of the "third" points. While the trend is toward more bass as you move the speaker closer to the back or side walls, there are cancellation points as you go toward the walls.

Unfortunately, I can't sit against a wall in my room. I can't even set the room up with the speakers and listening position on the long wall. The solution, according to Gerhard, is to locate the listening position in the exact middle of the room and put the speakers at the exact quarter points: a quarter into the room and a quarter from the side walls.

That, my friends, in a 16½' room like mine, is a Cinemarx—width, nearfield listening experience—and that's another Gerhard/Audio Physic listening preference. And if you think about doing that on the long wall, you have an even wider stage. Gerhard's ideal setup is you against the long wall (room permitting), speakers 8' apart and 6' from the listener. This way the speaker is closer to you than it is to any wall: the first thing you hear is the speaker, not the room—thus, the room is effectively taken out of the equation. The only wall in play is behind you and closer than 2', so it's effectively out of play.

STUCK IN THE MIDDLE

So I'm sitting around with these Virgos 6' (on the diagonal) from my ears, 4' and change into the room, and I'm stuck in the middle. To me, this looks odd—
almost uncomfortably in my face.

I'm going to go through the rest of the setup procedure before I tell you what I heard with these speakers, because when you're through reading, you might want to try yourself with your speakers in your room—although be forewarned: Gerhard claims it works best with first-order crossover designs using tightly matched drivers.

With the speakers toed-in, tweeter pointing directly at your ears, play a mono record—jazz or vocals—and listen for the center image. Move the speakers apart symmetrically until the center image begins to break up (assuming your room is wide enough). Move the speakers together until it solidifies again.

This ideal center-fill placement may put the speakers in additive or subtractive nodes. Whether you leave them there or move them will depend on the bass response you hear. Using the even/odd grids, move the speakers slightly to add bass (into the nodes) or subtract bass (out of the nodes). Inch changes will have surprisingly great effects on the balance from your exact starting point. Front-to-back changes have a more profound effect on bass, side-to-side on "warmth."

Once you're comfortable with the bass response/frequency balance and you've got a firmly focused center image using a mono record, toe both speakers out until the tweeter axes cross about a foot behind your head.

You're pretty close now. Moving only one speaker on one axis (ie, the forward inside edge of the four), point the speaker inward and outward, listening for the smallest, tightest, most focused image using (ideally) a mono recording of a jazz combo. At one point in your trials and errors, the images will "stack up" in the center—that is, you'll hear the drums, cymbals, bass, vocals, and other instruments locked in the center. That's the ideal position, and it doesn't matter if the two speakers are not symmetrical relative to toe-in. If at that point you notice the center image isn't precisely centered, move the same speaker you've been rotating, forward or backward, to center the image.

How hard was it to get this setup to "gel"? Very. As with any high-performance product—I don't care if it's a camera, a car, or a loudspeaker—the greater the precision, the more of a pain in the butt it is to get it to work right. You notice tiny imperfections in what it's doing—or not doing. I found myself making ridiculously small placement adjustments as I listened, moving my head side to side, shifting my body front to back as I worked to get the center image correct from my seated "comfort zone." Using my usual reference recordings—I can't say I play them for pleasure—I had a great deal of difficulty getting things the way I wanted them, though I could tell the trouble would be worth it when things finally settled in. Eventually, they did. Only then did I put the spikes on the feet.

WHERE'D THEY GO?

Yeah, yeah—you guys want me to hear this big, wide, totally unreal stage, and I'll be really impressed and I'll love your speakers.

I thought as I looked at the open space in front of me, the speakers barely in my peripheral vision. I was skeptical.

After about three weeks' worth of late-night listening sessions, I removed the Virgos from my system and replaced them with my ET VIs. Because I didn't like what I was hearing? No. Because through the Virgos I was hearing things in my listening room I'd never heard before. Not from the ETs, not from the NHT 3.3s. Was it the speakers? The setup? Both?

It was both. With the ETs precisely located where the Virgos previously sat—a place I'd never thought to put them—I got some of the same stuff the Virgos had given me: a spacious but well-proportioned soundstage with more of the natural acoustic of the recording and much less of my room. Despite the wide spread, center fill was actually more solidly rendered, with the position of the speakers more effectively removed from the equation.

But much of what was keeping me up late at night was the particular attributes of the Virgos. Once you've got them precisely located, aside from pulling a vanishing act, what they do better than any other speaker I've auditioned at home is resolve low-level detail: spatial and ambient information, and especially texture and touch in the lower midbass and upper bass. There was simply more information to be had in these areas through the Virgos than through either the ETs or the 3.3s.

This revealing of information was not achieved through "etchiness"—exaggerating leading edges of transients (analogous to turning up the "sharpness" control on your television)—or because of a rising high end in the frequency response. Rather, I sensed a lowering of the noise floor—as if the drivers and/or the cabinet simply made less noise—or very low harmonic distortion, or perhaps all of the above.

I took note on record after record of hearing not "bass," but a credible representation of an instrument—electric or acoustic—fingers plucking strings, and the resultant fundamental and harmonic envelope rendered with convincing ease.

On the title track of Davey Spillane's Atlantic Bridge (Cooking Vinyl 009/Tara 3019) is tremendous, almost overwhelming deep-bass energy. Through the Virgos I could hear, more distinctly than ever before, fingers tapping and damping strings to both create and restrict bass energy. Such adjectives as "lithesome," "nimble," "graceful," and the question, "Where'd those fingers come from?," passed through my mind.

Bass pitch definition and transient speed, especially in the lower midbass, were outstanding—again, outdoing any speaker I've auditioned at home. With the Virgos I always knew what was creating the low-frequency energy—I never heard unidentifiable thumps and bumps.

The Virgo's nimble bass performance, its outstanding control—especially its ability to resolve low-level bass information as notes fade into black—is probably the result of using two smaller and easier-to-move and -control drivers instead of one larger unit. Side mounting restricts unwanted high-frequency information emanating from the woofers from reaching the listener, and having four woofers firing across the soundstage helps load the room more efficiently. Then there's the cabinet integrity and the multiple chambers, all of which damp the port more effectively than any vented speaker I've auditioned. No "chuffing," as they say around here.

But what the Virgos could not do, at least in my room, was give me the visceral sock-to-the-stomach bass the NHTs provide—either in terms of low-frequency extension or dynamic punch. On MoFi's outstanding vinyl transfer of Little Feat's Waiting for Columbus (MFSL 2-013), when Richie Hayward sits down in front of his kit at the beginning of the record and gives the set a quick shake-down, with the NHTs it hits you in the gut like it would if you were in the front row. Via the Virgos, instead of "bomp! bomp!" you get "thunk, thunk."

Not surprising: the Virgos are specified as being down 3dB at 30Hz; the NHTs go down into the low 20s. And because the 3.3s put the woofer adjacent to the back wall, you get greater bass reinforcement. My room requires Godzilla-like bass response from a loudspeaker to give me the low-frequency goods: it's a "loopy" room with an unfortunate hollow back wall, which soaks up bass like a biscuit in gravy.

Hearing the Virgos in two other loca-
electrostatic
tions convinced me that, despite my room's problem, I was getting an accurate picture of the speaker's low-frequency capabilities. In a bigger room you'll get better extension and a more visceral presentation, but if you're into "red meat" bass, you won't get it here any more than that four-banger Porsche will satisfy you when you're into the thrill of a quad-throated-carb V-8 Chevelle. Just don't try taking that curve too fast.

I also heard a particular character to the bass—one I heard immediately at the other two locations, where different associated equipment was used. It was a slight midbass warmth—maybe just too much of a good thing. This quality fit so neatly into the sweet musical web this speaker spun that it was easy to ignore—even to like. But if you could just turn the woofers down a notch but leave everything else unchanged, you'd be on the money.

Even while I acknowledge hearing that sonic signature—the sound of the stand-up bass, electric bass, kickdrum, timpani, and all of the other instruments in that region sounded so musically right, so convincing—I still wasn't quite certain what was going on. Perhaps measurements will help explain.

DETAILS, DETAILS...

Like every other speaker in the world, the Virgo has colorations—audiodiel stranger could come in to your house and hear them in your speakers in a second. You get used to them, overlook them, and enjoy them—or you move on.

The character we're willing to accept, or can't help but reject, is why there are so many speaker brands, so many different sounds, and so many satisfied customers. When I read a speaker review that doesn't or can't reveal the fundamental character of a speaker—"character" as in it's making music of its own instead of just passing what it's fed—I figure the reviewer is either hopelessly smitten or incompetent.

The overall sound of the Virgo was on the warm, smooth side, which made its outstanding resolution and portrayal of inner detail all the more impressive. Well-recorded voices—male and female—came with noses, heads, and chests intact. When I listened to Doug MacLeod's outstanding AudioQuest release, Come To Find (AQ 1027, LP) on the Virgos, I heard a genuine human being sitting in front of me—not a decapitated head or salivating, sibilant lips in space like you sometimes get. I also heard an acoustic guitar with strings attached to a hollow wooden body.

The Virgo got right the balance between the fingers plucking the strings, the resulting warm though clearly metallic sound, and the guitar body resonating. If you play acoustic guitar, you'll recognize the completeness of the Virgo's rendering of it here—and on other great guitar recordings, such as Michael Newman's Classical Guitarist (Sheffield Lab Direct-to-Disc Lab10), John Renbourn's Sir John Alot Of (Transatlantic TRA 167), or Bert Jansch's L.A. Tournaround (Charisma CAS 1090). I mention the last two because they're totally obscure—and probably unavailable.

The Virgo was by no means a polite speaker. On truly awful recordings—those bright, hard ice-jams we all know and hate—the Virgos took my head off like any other designed-to-be-flat speaker. It's just that some others—like the NHTs, which sound subjectively brighter—lapped it off faster and more painfully; all the better to listen to White Zombie's new Astro-Creep 2000 (Geffen 48062) CD on—and I mean that as a compliment.

The mid- to upper-frequency transition was skillfully accomplished, as was the speaker's octave-to-octave high-frequency balance. Listen to the Virgo's rendering of the difficult-to-reproduce clarinet on such recordings as Clarinet Summit (India Navigation IN 1062, LP/CD); Reference's excellent Ebony Concerto (RR-55, LP/CD); or even the record I suspect inspired the Reference, Meeting at the Summit (Columbia MS 6805, LP), with Benny Goodman playing music by Stravinsky, Bernstein, Copland, and Morton Gould. You'll hear and see that sweet licorice stick pretty much as you would if it was playing some distance in front of you in the concert hall. So sez my cousin Becky, the veteran clarinet teacher; even though she was blown away by the realism, she didn't exclaim "unbelievable"—though she's been known to say that, and worse, on other occasions.

Other acoustic instruments—reeds, brass, strings, everything in the upper octaves—held together with the authority you would expect from this artfully constructed design. Strings sang with just the right mixture of bow and body. The saxophone was also skillfully rendered, with the right balance of reed, brass, and air coming from the bell. James Carter's The Real Firestorm CD (Atlantic 82742-2)—a dry, close-miked, analog recording—sounded skin-shivering convincing.

I also wouldn't be surprised if other measurements demonstrate a speaker that gets everything to your ears at the same time. That's because the Virgo's soundstaging and imaging were exceptionally good—totally stable and undeterred by changes in frequency. Images never slid from the middle of the stage onto the front baffles.

Images were rendered with three-dimensional authority at the front of the stage and layered through to the back and into the corners with equal believability. The center image offered outstanding focus and palpability, and it stayed put. When I moved my head off axis I could still hear it centered, but I heard the event from off to the side.

The Virgo, although less than 4' tall, generated a gigantic soundstage, with particularly impressive image height all the way across it. Rather than generating their own stage, into which a recording must be made to fit either by stretching or compression, the Virgos created a picture commensurate with the recording.

Music for Bang Baboom and Harp (RCA LSP 1866), Belafonte at Carnegie Hall (RCA LSO 6006), and The Weavers Reunion at Carnegie Hall (Analogue Productions APF005)—all of which have really big stages (and none of which I ever play for musical enjoyment)—were reproduced as large and as spacious as they are through the 7'-tall Es, with even better focus and rear-corner instrument placement. The Virgos rendered reverberation boiling off stage walls more cleanly and better timed than any other speaker I've auditioned.

If you've never heard "Buck Dance"—from Bang Baboom and Harp, which was recorded in Chicago's Orchestra Hall in 1958—you've never heard two geezer tap-dancers clicking their way out the backstage door and seemingly into Michigan Avenue traffic. "Why the hell would I want to hear that?" I hear you asking. You'll get your answer soon: Classic Records is reissuing it on vinyl.

If your system renders depth like the Virgos did, you'll hear those guys go way back to the left-hand corner behind the tubular bells just before they disappear—and, despite your better judgment, you'll enjoy listening. Every other aspect of spatial presentation—image focus, dimensionality, and size—was exceptionally well-depicted.

The Virgo was able to play loud without strain and without changing its fundamental character, and it was able to play at very low levels and still provide ultrahigh resolution—which is the design's forte. I derived equal satisfaction.
WHO THE HECK IS AUDIO PHYSIC? MARKUS SAUER OFFERS AN ANSWER.

Audio Physic President Joachim Gerhard is 38 years old and has been an audiophile for about 20 years. His hi-fi passion started out as a friendly competition with some friends about who had the best system. At the time, Gerhard had a big Tannoy horn, one friend had the Koss Model IV electrostat, and the other friend had the Ohm F.

Even then, Gerhard was struck by the basic dilemma that he's been working on ever since: how to overcome the seemingly insurmountable conflict between achieving musicality, pace, rhythm, and drive on the one hand, and soundstaging, detail, and transparency on the other. Gerhard didn't want to sacrifice one for the other. But even though he certainly didn't skimp on the hardware he used (big Levinsons and the like), hi-fi technology just wasn't advanced enough at that time to fulfill his yearnings.

Gerhard went to university to study electronics and design, in an attempt to balance the science-oriented and creative sides of his personality. At the same time, he had a hi-fi shop in which he sold mainly high-end stuff. He recalls this as the time when he learned that sound is not the only thing that matters in hi-fi products; customers also have to like the look and feel of products before they're willing to pay for expensive gear. Gerhard also did development work for a speaker-kit company, where he learned a lot about drivers and crossovers.

After leaving the university, Gerhard sold the shop, moved to Frankfurt, and worked for a company that made industrial plasma generators for etching and sputtering. In his spare time he collected material for a book he intended to write about loudspeakers. In 1985, Gerhard went on a walk with the two friends mentioned above, Willi Hegener and Hartmut Janssen, in the rural surroundings of his home in the Sauerland region (which is located smack in the middle of Germany and which produces a type of people famous for their single-mindedness—or blockheadedness, if you prefer). This walk generated the impulse to turn their theoretical knowledge about loudspeakers into a product. Hence the birth of Audio Physic.

"Small is beautiful" was his basic idea: a small enclosure doesn't much get in the way of the frequencies you need to reproduce music: a small woofer is easier to match to a tweeter, placing the two drive-units close to each other will minimize phase difficulties and maximize homogeneity. The first version of the Audio Physic Tempo was very much an audiophile minimonitor in the classic vein.

The speaker was not a complete success. It was basically a fine speaker, but the tonal balance was way too bright. Final voicing had been done on Gerhard's home system, the source of which was a Goldmund Studio turntable, Fidelity Research arm, and van den Hul-tuned EMT cartridge—a combination that had prodigious bass output. With more normal sources, the speaker sounded undernourished. (Lesson: Never rely on just one system when designing loudspeakers—unless you want your speaker to work only in just such a system. Audio Physic now has a listening panel of about 10 people who are consulted before a new model is put into production. Joachim Gerhard reserves the right to veto any decision by this panel, however—he wants to be able to personally stand behind the sound of any product Audio Physic makes.)

The Tempo was revised repeatedly in subsequent years and slowly started to sell in more reasonable numbers. Gerhard still had his job at the plasma-equipment company and was running both Audio Physic and the hi-fi shop on the side. If you get the impression that this man has more energy than most, you're right. Gerhard can party late into the night and still work efficiently in the morning.

In 1988, Audio Physic brought out the floorstanding, full-range three-way Avanti loudspeaker, which had a very small frontal area (the first "minimonitor with integrated subwoofer," to my knowledge; it started a trend that continues to grow). The woofers were located at the bottom of the cabinet on the left and right side walls, so the energies that are put into the cabinet will cancel out to a large extent. The Avanti speaker was very successful right from the start, really putting the company on the map. It established what has been the Audio Physic "house style" ever since: speakers with living-room-friendly dimensions, impeccable finishes, and true audiophile sound quality.

In 1989, Gerhard quit his job in Frankfurt, returned to his Sauerland home, and ran Audio Physic full-time. In 1992, Gerhard amicably bought out his partner, Willi Hegener (who was called to work for his family business), and now runs the company alone.

About the same time, Audio Physic started to move sideways a bit and import electronics and source components into Germany—most prominently the Lyra range of cartridges and the Forsell products. An unfortunate side effect was that Gerhard was spreading himself a little thin, with distribution, customer service, and research and development each demanding full attention. As a result, he now has decided to concentrate more on his own products.

Audio Physic has also hired a new development engineer, Bernd Theiss. Theiss's first project was the Terra subwoofer, which is intended to be a universal product for the entire Audio Physic range. The Terra is an active design (featuring two 10' woofers with 300W of on-board amplification) carefully calculated for optimal operation in or near room corners (this location alone adds about 9dB efficiency at 20Hz).

1 Under the auspices of Professor Malcolm Osmar Hawksford, Theiss will be doing an external Ph.D. thesis at Essex University, U.K., on three-dimensional audio.
I was lucky to hear a demonstration of the Terra. It added an enormous amount of realism to music reproduction—there was simply more "there" there. On the other hand, it sometimes cruelly revealed studio trickery. The Sonny Clarke Memorial Quartet's Yoko (Black Saint BSR 0109), one of my February 1992 "Records To Die For" selections, was revealed—in a system composed of the Forsell Air Bearing turntable with arm and Flywheel, a Lyra cartridge, Adyton electronics, some prototype speakers, and just one Terra subwoofer—to have been the object of rather more equalization than I had suspected. On my speakers, which are flat to about 55Hz, the bass had shown a pleasingly natural weight; with the Terra, the recording was revealed to have been heavily boosted in the lowest two octaves—an estimated 4–6dB at 40–60Hz. While the music still sounded superb, sonically I must modify my earlier recommendation: on full-range systems, this record sounds less than natural.

Future Audio Physic developments include a new model that is expected to be slotted above the current top-of-the-line Medea. Probably to be called the Midas, this will differ from the Medea in that it will have even lower bass extension, and a super-tweeter to cover the top octave and beyond. Like the Medea, the Midas will employ the Manger driver—a unique planar concentric driver.

Gerhard likes to talk shop with dealers and customers. His enthusiasm for loudspeakers and music seems endless, and he doesn't hide his opinions. Regarding loudspeaker chassis, Gerhard sees a trend toward stiffer diaphragms. There's the eternal tradeoff between internal damping and stiffness—the former important for smoothness of frequency response and natural tonal balance, the latter for sensitivity and for aliveness of sound.

Gerhard's very excited about Audax's new HDA (High Definition Aerogel) membranes, and will surely incorporate them in Audio Physic speakers once Audax gets manufacturing consistency right. But he also sees interesting possibilities with paper cones—especially when they're oil-impregnated. The latest version of the Virgo, the company's middle floorstander reviewed this month by Michael Fremer, employs paper cones for everything bar the tweeter. Since Audio Physic does a lot of business with countries of high humidity, non-treated paper cones are a no-no. Gerhard also believes that suspensions and cone surrounds need a lot of work. A stiff surround means a cleaner transient response, but also introduces dynamic nonlinearities—the so-called hysteresis distortion: the driver doesn't behave identically regarding forward and backward motion of the cone.

As to crossover components, Gerhard thinks that the fuss about the choice of the capacitor dielectric, which has its place in the high-end impedance world inside an amplifier, is out of place with regard to capacitors in passive crossover networks. For a low-impedance loudspeaker environment, Gerhard thinks inductance, physical smallness, and mechanical stability are much more important. For inductor coils, too, mechanical stability is more important than slight variations in electrical properties. On the whole, however, the best crossover is no crossover. The crossover of Audio Physic's smallest speaker, the Step, for example, consists of just one series capacitor for the tweeter.

It's impossible to build a totally rigid, non-resonating enclosure for a reasonably priced speaker. Once you accept that, you have to decide where and how you want to distribute the unavoidable resonances. All Audio Physic speaker cabinets are tuned to A = 344Hz. You must also consider the tradeoff between additional stiffening of an enclosure by internal partitions and the time-delay effect of adding mass to the cabinet. This is an element of the designer's art, but it's based in science. Audio Physic sponsored a university paper that determined optimum placing of stiffening braces and optimum physical shape of the brace itself.

Gerhard thinks that DSP (digital signal processing) equalization for loudspeakers is the only really novel development to come along in loudspeaker design in many a decade. The advent of fast and affordable computing power enables speaker designers to do in the digital domain what has been frustratingly difficult, if not impossible, to achieve via electrical and mechanical means: clean impulse response coupled with flat frequency and phase responses. The mechanical means to achieve those goals have often been in conflict with each other, which is one of the reasons why speakers have tended to sound so different, every designer judging the compromise a little differently.

An early fruit of Audio Physic's efforts in this area was the DSP equalizer for the Tempo, the result of a close collaboration with Norwegian amplifier manufacturer Adyton and the UK's University of Essex, where Gerhard is a Visiting Fellow.

Gerhard laments the fact that many hi-fi companies are still adsorbing as it may seem, don't have proper listening rooms. Audio Physic has a purpose-built listening room at the factory (heavily treated with Michael Green RoomTune devices), so they can show employees why it might be important to do something just the way they were told and not in another way that might be a little more convenient or economical.

In Gerhard's opinion, the widespread use of DRA Labs' MLSSA measurement system has been a mixed blessing for the loudspeaker industry. On the one hand, it's encouraged designers to look at the time-domain behavior of their products; on the other hand, the MLSSA algorithm assumes a distortion-free test speaker. Since many designers use this tool exclusively, the distortion aspect of speaker design has been slipping a little overall.

Audio Physic has a lot to contribute to the High End's common cause: the art of reproducing music at home. I don't believe novel solutions to old problems or high aesthetic appeal will fail to woo the customer's heart.

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2 The Forsell is a combo worthy of its Class A accoutrements in Simplicity's "Recommended Components" listing. Same Flywheel: it's a little too bland in the pace and rhythm department for my taste, however.

3 Reviewed by Robert Deutsch in the November '94 Stereophile (Vol. 17 No. 11, p. 169).

4 I have spoken to and visited with more than one designer who revealed to me that they don't really listen to their stuff anymore. "We used to do that when we were still in the learning phase, but now I know what sounds good and can concentrate on the lab", is the usual line. Typically, the companies in question are on the decline.
(Continued from p.127) tion at either volume—performance few speakers can deliver.

With the exception of the lower bass, the Virgo handled both large and small dynamic swings the way a 911 takes a hairpin turn: surefooted and without hesitation. And, with the exception of the lower bass, the Virgo got out of the way and allowed the essential character of both reference recordings and reference associated equipment to shine through. In that sense, the Virgo is a reference-quality loudspeaker.

MEASUREMENTS FROM JA

The Audio Physic Virgo is a reasonably hard load for an amplifier to drive, as shown by its plots of impedance magnitude and phase against frequency (fig.1). Not only does the impedance drop below 4 ohms for pretty much the entire midrange, but the phase angle is also moderately high in the upper bass and low treble. The changes in impedance with frequency, however, are small. The “saddle” in the magnitude trace at 27Hz indicates a low tuning frequency for the large port. The wrinkle at 230Hz is probably due to a cabinet resonance of some kind.

Fig.2 reveals the side-mounted woofers crossing over to the front midrange unit around 370Hz, with a mild rolloff above that frequency. The port output covers quite a wide bandpass. Both port and woofer responses feature a mild blip at 230Hz, the frequency of the wrinkle in the impedance plot. The enclosure walls seemed relatively dead acoustically, with only mild modes noticeable at 120Hz and 300Hz on the side walls and at 660Hz on the front baffle, so it’s probable that this peakiness between 200Hz and 300Hz is due to some kind of internal standing-wave phenomenon.

The response of the midrange unit and tweeter, shown to the right of fig.2, is astonishingly flat, with just a very slight rising trend noticeable. The sharp suckout just below 30kHz is an interference phenomenon due to the tweeter’s “phase plate.”

Averaged across a 30° horizontal window at the same distance, 50°, on the tweeter axis, the speaker’s response (fig.3) has a slight lack of energy in the upper midrange but again is very smooth and flat. There seems to be a broad hump in the lower midrange and upper bass in this curve, which was calculated by taking the complex sum—magnitude modified by phase—of the midrange unit, woofers, and port. While this correlates with MF finding the speaker to have a little extra midbass warmth—"maybe just too much of a good thing," he said—it does result in the Virgo having impressive low-frequency extension: this curve is down 6dB from the 1kHz reference level at 23Hz, despite the speaker fundamentally having an overdamped character.

Regarding the Virgo’s horizontal dispersion (fig.4, which shows just the changes in response off-axis), there’s a peculiar step around 1kHz, which is perhaps due to the side-firing woofers. Other than that and a slight flare at the bottom of the tweeter’s passband, the dispersion is even, with progressive HF rolloff as the listener moves to the speaker’s sides. This always correlates with excellent imaging ability, and the Virgo is no exception, to judge from MF’s auditioning comments and my own listening. The apparent peak at 27kHz in this graph is due to the on-axis interference notch in figs.2 and 3 filling-in, as expected, to the speaker’s sides.

Vertically (fig.5), the Virgo’s balance doesn’t change significantly as long as the listener’s ears are between 34° and 37° from the ground, which Tom Norton has found to be a typical listening height in normal domestic chairs and sofas. (Director’s chairs tend to place a listener’s ears between 40° and 43° from the floor.) Above or below that range, however, a suckout appears in the upper crossover region.

To examine how these quasi-anechoic responses sum, fig.6 shows a spatially averaged response trace taken for the pair of Virgos in my own listening room after I had experimented for a while to get the optimal integration with the room acoustics. There’s a slight energy excess in the upper bass, which is only partly due to the room; note, though, the excellent low-bass extension, the Virgo being flat to below the 31.5Hz, 5/8-octave band. This gave both rock and orchestral recordings a secure musical foundation, I found. Though the midrange and treble in-room meet superb ±1.5dB limits.
between 200Hz and 4kHz — about the best I have ever measured in my room— there’s a slight in-room peak in the mid-treble, the bottom of the tweeter’s pass-band where it will have its widest dispersion. I didn’t hear this as brightness as such, nor did it add any sense of grain; but it did make the Virgo’s balance sound a little vivid. But oh, the detail and depth to be heard!

In the time domain, the step response (fig.7) reveals the upper-frequency drive-units to be connected with the same positive-going polarity. The woofers, however, are connected with inverted polarity. The associated cumulative spectral-decay, or waterfall, plot (fig.8) is superbly clean throughout the upper midrange and treble. There’s your freedom from treble grain!

I agree with MF: this a superbly engineered loudspeaker that happens also to sound quite wonderfully musical!

—John Atkinson

MF CONCLUDES
I’m fortunate to have three very different pairs of speakers in my home right now, each with differing strengths and weaknesses. I have owned the Eminent Technology Vx ($3700/pair) for a number of years now, and I find them exciting and seductive despite their inability to portray wide dynamic swings. Their mid-range performance is superb, and bass is surprisingly robust, fast, and satisfying. Too bad it takes a few hundred watts minimum to drive them. Nonetheless, after having them out of the system for extended lengths of time, I always get a charge firing them up.

The NHT 3.3s, at $4000 and change for a pair, are a genuine bargain of a “muscle car” speaker. You get G-force low bass, outstanding frequency response, pinpoint imaging, superb dynamics, and more. What you don’t get is the low-level resolution or the suave rendering of acoustic instruments you get from either the ETs or the Virgos. But if rock and pop or organ music are your bag, the NHTs are an outstanding design and bargain-priced for what they offer.

The Virgos, at a grand more than the NHTs, didn’t give me the bottom-end authority or the dynamic slam of the 3.3s, but they did offer a combination of musical sophistication, ultrahigh resolution, and holographic imaging and soundstaging. They also have living-room-ready good looks—a stunning design for the ’90s, and most certainly worth a listen if you’ve got the scratch.

—Michael Fremer

**Fig. 5** Audio Physic Virgo, vertical response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 10°–5° above tweeter axis; reference response; differences in response 5°–15° below tweeter axis.

**Fig. 6** Audio Physic Virgo, spatially averaged ½-octave response in JA’s listening room.

**Fig. 7** Audio Physic Virgo, step response on tweeter axis at 50° (5ms time window, 30kHz bandwidth).

**Fig. 8** Audio Physic Virgo, cumulative spectral-decay plot at 50° (0.15ms risetime).
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WorldRadioHistory
I t's a common audiophile failing to remember the past as being much better than it actually was. (Though, of course, some things were better.) I remember the first time I heard a pair of Acoustic Research LST loudspeakers, in 1974 or thereabouts. Compared with the Wharfdales I had in my own system and the various Goodmans, Celestions, and home-brews I heard at friends' homes, the sound of classical orchestral recordings on the ARs was about as close to the real thing as I could imagine. And the AR ads reinforced my experience, telling me that musicians such as Herbert von Karajan also used LSTs. I never heard those speakers again, but occasionally I wonder how they would hold up today.

The trapezoidal LST was AR's top model back then, featuring quadruple 3½" dome tweeters and 1½" dome midrange units with a single 12" woofer in a sealed enclosure. The more conventional AR-3a, designed by Roy Allison and introduced in 1967, was a more conventional three-way design, using the same woofer with just one each of the dome midrange and HF units. Its mellow balance pioneered the cerebral "East Coast" sound in the '60s. I never heard the AR-3a, but I've heard audiophiles proclaiming it to still be one of the best speakers of all time. It was also, by all accounts, an amplifier-killer, its impedance featuring a punishing combination of low magnitude and high phase angle!

Acoustic Research—or AR, as it nowadays prefers to be known—has been through some turbulent times since the early '70s. Sold by its founders to the Teledyne conglomerate, the company never quite seemed to know who its customers were. Perhaps reflecting the schizophrenic nature of its name, some Acoustic Research models, such as the Tim Holl—designed AR 9 of 1979 and the Ken Kantor-designed MGC-1 of 1984, were aimed fairly and squarely at high-end customers. Yet much of the AR line seemed intended to compete head-on with the value-for-money offerings from Polk and Boston Acoustics.

The company's fortunes slipped through the '80s. In 1990, it was sold to International Jensen, who formed a new "Specialty Audio Group" in late 1993 to manage the Acoustic Research, Now Hear This, Day-Sequerra, and Audio Innovations brand names. After nearly 40 years in Massachusetts, Acoustic Research's marketing and engineering offices' design efforts were relocated to the NHT headquarters in Benicia, California, with design efforts coordinated by NHT's founding engineer, Ken Kantor, and management in the hands of NHT's other founder, Chris Byrne.

Given this history, when AR offered their new top-of-the-line loudspeaker, the 303, for review, I didn't need to be asked a second time.

AR 303 LOUDSPEAKER

John Atkinson


AR 303 loudspeaker

DESIGN

The $1200/pair 303 is Ken Kantor's re-engineering of the 3a. Similarly sized and similarly heavy but more expensive—at least in 1995 dollars—it uses what superficially appear to be the same drive-units: the hefty, long-throw, 12" woofer, the 3½" cloth-dome tweeter, and the 1½" dome midrange driver with its distinctive metal-mesh protective cover. Rather than the 3a's rather haphazard placement, however, the 303 mounts these drivers in a vertical array, with the tweeter and midrange offset to one side of the baffle. (The speakers are supplied as a mirror-imaged pair.)

But the drive-units are not the same, having been redesigned in light of the development in technology in the 30-or odd years since the originals were produced. The crossover frequencies are also slightly different, at 650Hz and 5.5kHz compared with 600Hz and 5kHz. The crossover is carried on a small printed circuit board attached to the inside of the terminal panel, and uses non-polarized electrolytic capacitors and low-distortion, iron-laminate—cored inductors as well as a bunch of power resistors. The woofer and midrange low-pass crossover slopes are second-order, 12dB/octave; the tweeter high-pass is third-order, 18dB/octave; and the midrange unit rolls in with a 6dB/octave electrical slope. Internal wiring appears to be 18-gauge and is attached to the drive-unit terminals with push-on clips.

Ken Kantor is the farthest thing from a tweak like me, so there's no provision for biwiring, nor are the speakers supplied with spikes or the bushings into which to screw them. The enclosure is made of 1" MDF covered with a black laminate material and completely stuffed with bonded acrylic fiber. At 54 lbs, the 303 is a solid chunk of speaker!

SYSTEM & SETUP

The ARs were auditioned in my dedicated listening room driven by a pair of Mark Levinson No.20.6 monoblocks, a

1 The various Cello loudspeakers are direct descendants of the LST designer Mark Levinson used the old AR model as his paradigm from which to go forward. In fact, the Cello Amatis looked like a stacked pair of LSTs and used AR drive-units.
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Krell KSA-50S, a Conrad-Johnson Premier Eleven A, and a Cary Audio Design CAD-300SEi integrated amplifier (see RH's review of the Cary elsewhere in this issue). The preamplifier in my room was the remote-controlled Mark Levinson No.385, with a Mod Squad Phono Drive EPS used to amplify LP signals from a Linn Sondek/Cirkus/Trampolin/ Lingo/ekois/Arkiv setup sitting on an ArchiDec table.

Digital sources were Mark Levinson No.30.5 HDCCD and Parts Connection Assemblage D/A processors driven by a Mark Levinson No.31 transport via Madrigal and Illuminati AES/EBU cables, and an Audio Alchemy DTI+Pro or a Sonic Frontiers Ultrajitterbug.

Interconnects used were AudioQuest’s AudioFruth Lapis x3 alternating with XLO 1.1 Signature; speaker cable was a doubled run of AudioFruth Sterling. All source components and preamps used in my listening room were plugged-in to a Power Wedge 116 MK.II, itself plugged-in to a dedicated AC circuit and fitted with the Power Enhancer option. The amplifiers were plugged-in to a Power Wedge 100, again fitted with the Power Enhancer.

The speakers sat on 11”–high sand-filled bases, which in turn sat on Mod Squad Tiptoes. This combination placed the 303’s tweeters 35” from the floor—a sideburn below my scated car level.

**SOUND**

One of the advantages of a scaled-box woofer loading compared with reflex is the slower rate of rolloff below the system resonance; 12dB/octave compared with 24dB/octave. With the response in a small room typically rising at 4dB or so per octave in the bottom two octaves due to boundary effects, a scaled-box speaker can have impressive bass extension for its size. The big-bottomed 303 does low bass better than any other $1200/pair loudspeaker I’ve heard. Whether it was classical pipe organ or the synth bass on Annie Lennox’s new Medusa CD (Arista 25717-2)—check out the awesomely deep sub-bass sounds on her version of Neil Young’s “Don’t Let It Bring You Down”—there was a weight to the sound of bass lines that underpinned the music in a most satisfying manner. The combination of a relatively large enclosure—“bookshelf”? Yeah, right; maybe for André the Giant!—and a good 12” woofer is hard to beat. The warble tones on Stereophile’s Test CD 3° descended to 32Hz at what seemed like full level, though with rather an exaggerated character through the mid- and upper bass.

And this was after quite a lot of experimentation with room placement to find the optimal balance between low-bass extension and upper-bass clarity. AR recommends putting the 303s near room boundaries, but I found that to exaggerate the already full bass balance to the point of unacceptability. Either AR expects its customers to be bass-heads or designer Ken Kantor is one. I ended up with the speakers about 1.5m from the wall behind them and well away from the side walls.

I noticed a lack of articulation in the 303’s lower mids, however. In Blue Nile’s “Downtown Lights,” from the Annie Lennox album, it is a nice harmonic twist in the verse after the first bridge: the bass drops to the relative minor at a cadence instead of the expected tonic. This song depends heavily on the bass line to define its harmonic progression, as the accompanying chords are based almost entirely on suspensions. Though this bass note’s fundamental was reproduced at full level, the harmonics that help the ear determine pitch seemed obscured via the 303s compared, for example, with B&W Silver Signatures. This meant that, anticipating the usual tonic note, I didn’t notice anything different about this verse from the others on the first couple of playings. Only when I went back to the BKWs did I get this little harmonic nicety.

Higher in frequency, the AR 303 offered a smooth but mellow tonal balance—reflecting its “East-Coast” heritage, I guess. While not quite sounding too dull, the speaker’s top octaves definitely sounded reticent. Although this usefully tamed the rather aggressive highs from the ARs, the already–rolled-off cymbals on Neil Young’s new HDCC-encoded Minor Ball CD (Reprise 45934-2) lost too much of their sparkle.

The 303’s rich, warm balance was a definite plus with much classical orchestral music, however, a newly acquired 1974 quadraphonic LP of Copland conducting his own Appalachian Spring (Columbia Masterworks MQ 32736—just love those garage sales) benefiting greatly.

With the Conrad-Johnson tube amp, the highs were further plateau’d down, while with the single-ended Cary with its 4 ohm output impedance, there wasn’t quite enough treble left to preserve the music’s sense of life, as sweet, musical, and expansive as the midrange监督 Curiously. This suggests that the ARs are intended to be used with inexpensive solid-state electronics, which are generally far from reticent in the treble!

Other than the mellow balance and thickened upper bass and lower mids, the 303 seemed relatively uncolored. I wasn’t made aware of any specific vowel-type colorations in the midrange, for example. And the treble was very clean—no noticeable grain or sibilance emphasis, and with good presentation of recorded detail.

Regarding soundstaging, the 303s didn’t throw much image depth, even on recordings where this aspect seems otherwise quite immune from the slings and arrows of outrageous speaker fortune—the twittering-birds introduction to Andras Vollenweider’s Behind the Gardens—Behind the Wall—Under the Tree… CD (CBS MK 37793), for example. They did offer pretty tight lateral imaging precision, which was unexpected given the wide baffle.

The AR has good dynamics, going loud without any sense of strain. It definitely sounds a little slow, however—most probably a consequence of its low-frequency balance. The bass lines from the electric harp on the Vollenweider disc had a nice fat purr to their sound, but lagged a little in the get-up-’n’-boogie department.

**Measurements**

Other than impedance (for which I used an Audio Precision System One) and the in-room spectral analysis, all measurements were performed with a MLSSA v.83 system from DRA Labs, in combination with an Outline computer-controlled loudspeaker turntable and a B&K 4006 microphone calibrated to be flat on-axis at the typical measuring distance I use. To minimize reflections from the test setup, the measuring microphone is flush-mounted inside the end of a long tube. Reflections of the speaker’s sound from the mike stand and its hardware will thus be sufficiently delayed not to affect the measurement.

While the new AR 303’s impedance does drop to 3.3 ohms in the upper bass and 3.6 ohms in the high treble (fig.1), it’s not nearly as demanding a load as the original AR-3a. The shape of the curve, however, does confirm my comments that its already mellow balance will be accentuated if the speaker is driven by an amplifier with a highish source imped-

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3 For my in-room spectral analyses I average six measurements at each of 10 separate microphone positions for left and right speakers individually, giving a total of 120 original spectra. These are then averaged to give a curve that, in my room, has proved to give a good correlation with a loudspeaker’s perceived balance. I use an Audio Control Industrial SA-3050A spectrum analyzer with its own microphone, which acts as a check on the MLSSA measurements made with the B&K mike. I also used the Goldline 135P-30 automated spectrum analyzer (currently under review).
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ance. The magnitude peak at 38.5Hz is due to the sealed-box woofer resonance; there are no wrinkles in either trace to suggest the presence of cabinet resonances. Listening to the panels with a stethoscope revealed a slight amount of “cabinet talk” in the lower midrange present on the front baffle and back panel, but this was low in level.

Although the 303 is specified as having a voltage sensitivity of 85dB2.83V/m, my measured B-weighted figure was a little lower, at 84dB. The difference is inconsequential, though a goodly powerful amplifier of at least 50Wpc output is indicated.

Looking at the quasi-anechoic response averaged across a 30° horizontal angle on the tweeter axis (fig.2), the overall response trend is smooth, but sloped—down a little from the upper bass to the high treble. There is also a distinct step in the curve just above 1kHz. This kind of response shape would usually be associated with some audible nasality. The 303, however, seemed relatively uncolored, suggesting that the on-axis peak ‘n’ dip is probably compensated for by the opposite behavior off-axis.

In the bass—measured in the nearfield with the microphone capsule almost touching the woofer dustcap—there’s a moderate rise in the midbass, peaking 5dB above the 1kHz reference level at 63Hz, before the speaker’s output drops to -6dB at a low 27Hz. The 303’s owner gets a lot of bass for the money. Though the owner’s manual recommends placing the speakers close to room boundaries, this will have the effect of accentuating the 303’s bass output even further.

Despite its wide baffle, the 303 offers reasonably well-controlled treble dispersion, as can be seen in fig.3—note that only the differences in response are shown in this graph. The more even change in balance is to the tweeter edge of the baffle, shown to the front of fig.3. If you have to position these speakers close to the side walls, this suggests that the tweeters should be on the speakers’ outside edges; otherwise, place the mirror-imaged speakers so that the tweeters are on their inside edges. The wide baffle does make its presence known, however: despite the use of a small-diameter tweeter dome, the top two octaves fall off more rapidly with off-axis angle than would be the case with a minimonitor.

In a typical room, this will contribute to the speaker’s rather mellow tonal balance.

Note that fig.3 reveals that, in the midrange, the 303 also has rather more limited dispersion than a typical two-way design. This is probably due both to the crossover performance and to the use of a 12" LF driver. Despite my earlier conjecture, the lack of off-axis energy is a little lower in frequency than the on-axis peak around 1kHz, however.

Predicting a loudspeaker’s perceived tonal balance from its on-axis response and how that response changes off-axis will never be an easy task—or even, sometimes, a possible one!

Vertically (fig.4), the 303 only offers its optimal treble balance over a very small listening window: on or just below the tweeter axis. Above or below that axis, suckouts appear in the crossover regions and the tweeter’s top octave rolls off. This makes AR’s recommended stand height strange: stands much shorter than 12" will result in a lack of mid-treble energy with the typical listener’s ear height of 35–39". My own recommendation would be for stands 12–16" high, though the large 303 does look alarmingly top-heavy on a normal, center-pillar speaker stand.

Even with the speakers well away from the walls, the in-room response (fig.5) still featured an excess of energy in the bass, as I’d noted in my auditioning. The benefit gained from this, however, is an impressive low-frequency extension, even the 25Hz, ½-octave band being almost up in level with the midrange reference level. A slight excess of low-treble energy will probably not be heard as brightness per se. Instead, I sus-
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pect it gives the car a reference point against which the higher-treble balance can be judged. And the 303's in-room balance is somewhat rolled-off in its top two octaves, correlating with my comments on its perceived HF quality. Note, however, that the in-room balance is very flat around 1kHz despite the on-axis peakiness. It looks as though the off-axis behavior does compensate for the on-axis departure from flat in this region—at least in my room.

In the time domain, the 303's impulse response (not shown) is non-time-coherent but otherwise unremarkable. Ignore the wrinkles at and after the 7ms mark in this graph, which are due to the first reflections of the speaker's direct sound from the room boundaries. The step response (fig.6) indicates that the tweeter and midrange units are connected with inverted polarity, while the woofer's output is in positive polarity, these checked by examining the step responses of the individual units. The 303's cumulative spectral-decay, or waterfall, plot (fig.7), calculated from the impulse response data, is impressively free from resonant modes. While there's a little bit of low-level hash between 6kHz and 8kHz, and the response step at 1kHz is also associated with some delayed energy, this is otherwise an excellent result, implying good resolution of recorded detail and a relative freedom from treble grain, as I found.

CONCLUSION
I like old things. (Heck, at 47 I sometimes feel I am an old thing.) I generally like tube amps; I wear a 1939 analog watch; I play a 1964 Fender P-Bass; I drive a 1971 Mercedes-Benz sedan, designed around the same time as the AR-3a. As much as I love the vehicle—my wife calls it the "Titanic"—whenever I rent a modern car, the things my oldster lacks are thrown into sharp relief. Despite its superficial resemblance to the vintage AR-3a, however, the AR 303 is undoubtedly a modern speaker, with no subjective or objective failings that could be laid at the feet of its heritage—other than its dulled tonal balance.

I must admit that the 303's balance is not particularly to my taste, as I will always sacrifice 10 or 20Hz of bass extension to max out on low-frequency articulation. I also like more image depth and a less reticent HF. But I did enjoy my time with the AR 303, and for those bass-heads in love with the bottom octaves, the AR 303, at $1200/pair, offers the best bang for the buck. Be prepared to experiment with room position and stand height, however, if you want to get the best performance balance.

So, Ken Kantor—are you going to resurrect the MGC-1 next?

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**Fig. 7 AR 303, cumulative spectral-decay plot at 50" (0.15ms risetime).**

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**Fig. 6 AR 303, step response on tweeter axis at 50" (5ms time window, 30kHz bandwidth).**

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**Fig. 5 AR 303, spatially averaged 1/2-octave response in JA’s listening room.**
CARY AUDIO DESIGN CAD-300SEI
SINGLE-ENDED TRIODE INTEGRATED AMPLIFIER

Robert Harley


As strongly as I believe that the listening experience is the most reliable method of judging the quality of audio equipment, I've been biased against single-ended tube amplifiers because of their quirky measured performances. Without having heard single-ended under good conditions—much less living with an SE amplifier—I had concluded that many listeners must like them because they're euphonically colored by large amounts of low-order distortion and impedance interactions with the loudspeakers. SE amplifiers seem to be a departure from the goal of making the electronics transparent. Moreover, the range of loudspeakers suitable for SE amplifiers is so restrictive that I wondered why anyone would bother with these underpowered distortion-generators. I had fallen into a trap that I've repeatedly railed against: drawing conclusions without firsthand listening experience!

To find out more about the single-ended experience, I asked Cary Audio Designs for a sample of their least expensive single-ended amplifier, the $3395 CAD-300SEI integrated model. I was prompted to try single-ended triode amplification by the Infinity Composition F-PR loudspeakers on hand in my listening room (see the review elsewhere in this issue). The Composition has a high sensitivity (JA measured 95.5dB/2.83V/1m) and a powered woofer, making them appear an ideal load for the 11Wpc Cary 300SEI.

After some critical listening evaluations—and many more hours of sheer musical magic—I've become convinced that single-ended tube amplifiers sound fabulous in spite of their distortion, not because of it.

DESCRIPTION
The CAD-300SEI is essentially two of Cary's CAD-300SE monoblock power amplifiers ($3800/pair) combined in one chassis with a volume control and a class-A triode line stage. The compact (14" by 14") 300SEI is a visual work of art, with a chrome chassis, shapely 300B output triodes up front, and angled output transformers. The review sample had the optional ($500) 24k-gold faceplate and knobs, further heightening its beauty.

Three line-level inputs are provided on high-quality RCA jacks, with input selection via a front-panel rotary knob. A large volume control, smaller balance adjustment, and power rocker switch finish off the front panel. The rear panel holds the RCA input jacks, Edison-Price Music Posts for loudspeaker connection, a line fuse, and an IEC AC-line jack.

The front panel is also home to a 1/4" headphone jack, which is activated by a small pushbutton on the top plate. This selects between the headphone output and the Music Post loudspeaker output terminals. When listening to the 300SEI through headphones, you're hearing the entire amplifier right off the output transformers—no op-amp circuits to drive the headphones here. Switching between loudspeakers and headphones is accomplished by a gold-plated 10A relay.

A 1/4" 'phone jack on the chassis top provides access to the bias measurement point; simply insert a 'phone plug and measure the current flow with a DC ammeter. A trim pot next to the jack adjusts the bias. Not everyone has a two-conductor 1/4" 'phone plug lying around; Cary should supply one with wires already attached.

The power supply is a full-wave center-tapped configuration filtered with a pi-L network. The rectifiers are bolted to the chassis top plate, which makes the entire amplifier warm to the touch when
it's running. Two 1200µF and one 100µF electrolytic filter capacitors bypassed with polystyrene caps provide 230 volts of energy storage. Plate voltage on the 300B output tube is 430V. A "soft start" circuit powers the 300B output tubes' filaments first, then the high-voltage plate supply 60 seconds later. Warm-up time is said to be only three minutes.
The input/output amplifier stage consists of a single 6SN6 dual-triode tube, with one half of the tube used for the left channel and the other half for the right channel. This class-A voltage-gain circuit is the same as that used in the Cary SLP-90 preamplifier. This stage is followed by a pair of 6SN6 triodes (one per channel) in a constant-current, plate-loaded configuration, each of which drives a 300B triode output tube. No feedback—local or global—is used in the 300SEI. That's right, this isn't a low-feedback design—the 300SEI has zero feedback.
The 300B output tube is a classic triode design, with only three elements: the cathode, grid, and plate. Unlike nearly all other tubes in which a separate filament heats the cathode, the 300B's filament and cathode are one and the same, which gives the 300B the "direct-heated" designation. Seeing just four pins on the 300B made me realize just how simple a direct-heated triode is! The pair of 300Bs and three 6SN6 tubes are mounted in silver-contact sockets. The output transformers, which are custom-designed for the 300SEI, are a EI-laminate type wound with oxygen-free copper wire and feature an air gap.

Cary's Dennis Had talks with Robert Harley

Cary Audio Design founder Dennis Had is largely responsible for popularizing single-ended amplifiers in America. Since appearing on the scene in 1989, Cary Audio Design has forged its own niche in the high-end audio industry. I spoke with Dennis Had about how he got started building amplifiers, and why he's so committed to single-ended triode designs.

Dennis Had: It all started with a science project I did as a child, which was a single-ended audio amplifier.
It was based on a 2A3 [tube] and had all of a couple of watts. It got the blue ribbon, and I was hooked forever.

After that I became intrigued by ham radio. I built some shortwave radios, and had a ham radio license when I was 11. There was a group of us into ham radio and audio. My buddies were building higher and higher output-power amplifiers, and the mentality was that the more power the amplifier had, the better it must sound.

I was going in the opposite direction, trying to replicate the sound of my father's string quartet, which practiced every Friday night in our home. I knew what real music sounded like from hearing that string quartet every week. My objective was to recreate that electronically. I would play back the records they made and try to replicate as closely as I could the sound of the string quartet in our home.

Every time I worked with a single-ended triode instead of a push-pull design it sounded more realistic. Running single-ended, it seemed that the speaker was less prevalent and the sound was fuller and more lifelike.

I remember saving my paper-route money and spending $9.90 for a 300B [output tube], because that was the next step up from a 2A3. My friends were buying 6L6s at 59¢ each, and I'm spending nearly $10 on a 300B. They thought I'd flipped my lid. Their amplifiers were more powerful, but mine sounded more realistic. I still have that first 300B. It has a gazillion hours on it, and it still functions beautifully.

Harley: Was your career in RF design an outgrowth of your experience as a teenager?

Had: My formal career was as an investment banker. A lot of what I did was secure investment funding for companies. I had some ideas to start a company in the RF field, which I knew very well from an engineering standpoint. In 1974, I designed an RF receiving and transmitting converter and founded a company on that design. In 1978, we were number 82 on the list of fastest-growing privately held companies in America. We went from my basement to an industrial park and 70 employees. It was extremely successful.

I was way ahead of the leveraged buy-out boom of the 1980s and in 1978 did a leveraged buy-out of another company. By 1980 I got killed. I sold the whole thing.

But all along the way I was building very sophisticated high-powered audio amplifiers for my own enjoyment. In fact, I had a 300W single-ended amplifier. In my neighborhood, if you wanted to listen to music, you came over to the Had house. I always had this love for audio amplifiers. I didn't know what it was to go out and buy something; I built everything myself.

Harley: What made you go into business building amplifiers for other people?

Had: I started another successful company in 1980 designing and building RF products, and I sold it in 1983. I did some RF design for other people, all the while building audio amplifiers for fun. Then I walked into a new high-end store right here in Cary, North Carolina, and I saw tube amplifiers—brand-new tube amplifiers! I was shocked. I knew about Audio Research but never guessed at how popular tube amplifiers were. I got to know the store owner and bought an amplifier to see what made it tick. I thought it was an accident waiting to happen.

The store owner asked me to work on some of the tube amps he had in for repair. When I took the stuff home, I saw the shortcomings of each and knew I could build a better product than what was being offered in the marketplace. At the same time, it would give me an opportunity to present what I considered to be the best-sounding amplifier design: single-ended.

Harley: Wasn't it commercially risky to start a company based on an older, low-powered technology when single-ended amplifiers were virtually unknown in the US in 1989?

Had: You ask yourself which is the greater risk: to build "niche" products and come into the marketplace against established companies, or to have a product that is totally dissimilar from the run of the mill, one that would stand out because of its unusualness.

Of course, I took the second option. I would rather be recognized for having a different type of product than a copycat product. There were so many people using the same mundane circuit over and over again and just repackaging it. I thought it was better to offer a technology that I personally believed in and was different in the market.

Harley: How do you respond to the question of the poor bench performance of single-ended amplifiers?
to reduce the tendency of the transformer to behave as a big electromagnet. This is a danger with single-ended amplifiers because the bias current flows in only one direction through the primary winding. The two output transformers

3 The names associated with tube and solid-state electronics reveal much about their fundamental operation. The term “transistor” was coined in a casual hallway conversation among its inventors. If a vacuum tube is a transconductance device, they reasoned, the new solid-state amplifier was a transconductance device, or “transistor.” Tube proponents like to point out that, in a tube, electron flow through a vacuum, not through a solid semi-conducting material as they do in a transistor.

**Had:** You can sometimes fool the marketplace with good-looking test results. But every time I try to make a single-ended design look beautiful on the test equipment, it takes the beauty out of the musical presentation. It’s a whole different ballgame between specs and what it sounds like. With single-ended, the lack of feedback, the simplicity of design, and not splitting the signal are more important than test results. Forget about the total harmonic distortion; any of the nasties that may be there are masked by the second harmonic, which isn’t offensive to the ear.

**Harley:** What are the virtues of single-ended?

**Had:** More than anything, the virtue of single-ended is the simplicity, and that the signal is handled in a linear a fashion as possible. In a push-pull amplifier you split the signal into two halves and then recombine those halves at the amplifier output. I felt that the power amplifier should just replicate what the CD player or turntable is outputting and maintain the integrity of the waveform. Single-ended makes the most common sense from an engineering standpoint and also has the least number of parts in the signal path. You’re not taking the signal and dividing it up.

Another key factor is lack of feedback. Feedback is always a correction after the fact. I’ll often take apart competitors’ amplifiers and remove the feedback. After doing that to many designs, I’ve found that the feedback is just a big Band-Aid trying to rectify what should have been done right in the first place.

My commitment to single-ended comes from my personal beliefs and designing and listening for the past 38 years.

**Listening**

I was pleasantly surprised by how loudly the 300SEI played with the Genesis 11.5s. The levels were obviously limited, but not to the extent I expected from 11W. The presentation lacked dynamics, however, and sounded a little closed-in through the top octave compared with the ARC VT150s.

It was unmistakable, however, that the 300SEI communicated the music in a way I’d never experienced before. There were immediacy and a palpability to the sound that were breathtaking. I don’t mean a sonic immediacy, such as a forward character, but a musical immediacy that riveted my attention on the music. On the superb new classical-guitar duo Banque Inventions (Dorian DOR-90209), for example, I had the distinct impression of sitting in front of the two guitarists in the Troy Savings Bank Music Hall. The 300SEI benefited from the low playback level called for by the instrumentation, producing a realistic level with this small-scale music.

Switching to the 96dB-sensitive Infinity Composition P-FRs (which also have a powered woofer) really let the 300SEI open up. The amplifier’s limited dynamics and the top-octave air missing with the Genesis were largely restored when the Cary was driving the Compositions. I could also get a totally satisfying listening volume from the 11W amp—with room to spare. In fact, the 300SEI cruised comfortably on most music when driving this easy load. The 300SEI’s ability to involve me in the music was heightened by the Compositions’ high sensitivity.

The 300SEI’s sound was ultrasmooth and liquid, but not in a colored, euphonic way. Instead, I felt as though I was hearing only the music, and not the music overlaid with electronic hash. The sound was totally devoid of grain, brittle textures, edge, and stridency. My wife put it best when she said, “The sound doesn’t abrade you”—an interesting choice of words for a non-audiophile. The midrange and treble cleanliness, smoothness, and astonishing liquidity gave saxophone a warm, round, burnished sound that lacked any trace of grain or glare. Vocal sibilance was less objectionable, with less of a hashy, intrusive character.

This liquidity and lack of electronic artifact produced a relaxation and intimacy with the music that made me want to play records and CDs long into the night. In fact, I spent night after night totally immersed in the musical experience provided by the 300SEI and the Compositions.

Although the presentation was silky smooth, I don’t want to give you the impression that the 300SEI sounded syrupy, rolled-off, or overly romantic at the expense of resolution and accurate timbre. The 300SEI was good at resolving detail, which is partly why this amplifier was so involving. But the detail...
**The Sequel**

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wasn't thrust on me, instead sounding subtle in a way that invited me into the music. The detail was there but was understated and refined.

Instrumental timbre sounded astonishingly real—a quality most apparent on violin. When you hear violins in a concert hall, they're never shrill, screechy, or strident. So it was with the 300SEI, which reproduced solo and massed violins with a warmth and beauty unmatched by any electronics I've had in my system. Similarly, the 300SEI's rendering of the human voice was glorious. The amplifier restored the human quality to vocals, making them more lifelike, present, palpable, and expressive. Listen to Doug MacLeod's *Come to Find* (AudioQuest ACD1027) through the 300SEI to hear this presence and directness of expression I'm describing. The 300SEI's portrayal of the harmonic structure of instruments and voices just sounded more like the real thing, with less of the mechanical, synthetic sound we've assumed has been inherent in music reproduction.

The 300SEI's tonal balance wasn't perfect, however. The top octave lacked air and extension, making the presentation slightly closed-in. This characteristic tended to make the soundstage less expansive in both width and depth and imparted a smaller sound to the recorded acoustic. With small-scale music, the effect wasn't a drawback; but on full-scale orchestral or choral works, the presentation lacked the halo of bloom at the soundstage's outer edges I get from the VT150s. Rather than presenting a huge acoustic the way the VT150s do, the 300SEI's more intimate portrayal of space lent itself better to smaller works. Acoustic jazz was particularly well-served by the 300SEI's sonic perspective, as well as by the amplifier's ability to communicate the musicians' intent with more emotional impact.

I had an unusual perception when listening to jazz through the 300SEI: I gained a heightened awareness of the musicians' phrasing. Instead of hearing a collection of notes, I could feel the melodic and rhythmic nuances that contributed so much to the musicians' expression. In fact, if I had to describe the 300SEI with one word, it would be “expressive.” This amplifier provided a more direct path of communication between the musicians and me. It's difficult to describe, but once you've heard it, the experience is unforgettable.

Because both the Genesis II.5s and Compositions have powered woofers, their bass presentations weren't dependent on the 300SEI's ability to deliver current to a woofer. Consequently, the presentation with either loudspeaker had terrific bass, which went well with the ultra-liquid mids and treble. Driving the full-range KLH minimonitors with the 300SEI revealed that the Cary amplifier's bass sounded a little woolly and somewhat lacking in tautness and definition. The overall sound was, however, better than I've heard from these speakers.

Compared to what I consider the reference in power amplifiers, the Audio Research VT150s ($12,000/pair), the 300SEI had a softer treble, with less HF definition. The mids were slightly more laid-back and “darker” with the Cary—although, paradoxically, the 300SEI put more musical focus on the midrange. Dynamics were easily better from the VT150s, the more powerful monoblocks having more transient impact, wider micro- and macrodynamics, and the ability to go loud gracefully. The 300SEI had tighter image focus, with a smaller, more intimate soundstage.

Conversely, the VT150s better presented a sense of a concert hall's size, with a greater feeling of the acoustic surrounding the images. The 300SEI had, however, a palpability and directness of expression I didn't get from the VT150s. Note that the VT150s are far more practical: they'll drive virtually any load and are not restricted to high-sensitivity loudspeakers, as is the 300SEI.

**Measurements**

Although I expected the 300SEI to have unusual measured performance, I wasn't prepared for the amplifier's extreme deviations from what we regard as good technical performance.

First, the 300SEI's output impedance was a whopping 4 ohms at 20Hz, 4.2 ohms at 1kHz, and 4.8 ohms at 20kHz. This is by far the highest output impedance I've measured in a power amplifier. With an output impedance roughly comparable to that of many loudspeakers' load impedances, we can expect significant departures from flat response when the 300SEI drives most loudspeakers (more on this later).

Input impedance measured a typical 30k ohms, meaning the 300SEI won't load down source components connected to it. Voltage gain was 6.7 (16.5dB) with the volume halfway up, 14.7 (23.2dB) with the volume control wide open. The 300SEI doesn't invert absolute polarity.

Fig.1 shows the 300SEI's frequency response measured at 1W into 8 ohms, 2W into 4 ohms, and into the John Atkinson-modified NHT dummy load (8 ohms nominal). As explained last month (August '95, p.168), this load is designed to simulate the reactive load presented by a real-world loudspeaker (fig.2), not the purely resistive 8 ohm load found on a test bench. The 4 ohm pair of curves is the one with slightly greater treble rolloff and has been adjusted for the drop in absolute level.

The roller-coaster curve was taken with the 300SEI driving the simulated loudspeaker load. These frequency-response aberrations are severe: the entire upper midrange and treble are attenuated, as is the upper bass. Though the Infinity's variation of impedance with frequency (fig.3) is much less severe than our dummy load, I was still bothered by the lack of treble immediacy with the 300SEI and compensated for it by slightly toeing-in the Compositions.

Fig.4 shows the predicted response of the Cary driving the Infinity speaker, calculated from the impedance data in fig.3. Note that the shape of the response closely echoes the speaker's impedance plot. The rise in the bass is due to the inherent crossover to the speaker's powered...
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subwoofer, but is inconsequential due to the speaker's roll-off below 120Hz.—Ed.) No such compensation was needed when driving the Compositions with the VT150s.

I'm certain, however, that the 300SEI's treble smoothness and liquidity were not solely the result of its treble attenuation. If you roll off a grainy treble, the grain may be less offensive, but the grain is still present.

The 300SEI's crosstalk is shown in fig.5. The amplifier measured a straight 40dB of channel separation across the audioband—mediocre performance at best. This poor measured separation may have been due to noise as the signal/noise ratio was also less than impressive. It measured 72dB (left channel) and 66dB (right channel) unweighted over a 22Hz-22kHz bandwidth, referenced to 2.83V output (1W into 8 ohms) and with the input shorted. These figures improved with A-weighting to 86.7dB (left) and 81.7dB (right). The large improvement in signal/noise ratio gained by A-weighting the measurement suggests that the noise is low in frequency. (Weighting curves roll off the frequency extremes to simulate the car's reduced sensitivity at those frequencies.) To investigate further, I performed an FFT-derived spectrum analysis on the 300SEI's output with the amplifier's input shorted and the volume set to the maximum (fig.6). (The 0dB reference in this graph is 2.83V into 8 ohms.) The spikes at 60Hz and its harmonics indicate that the 300SEI's noise is mostly power-supply related. Even with the unsensitization of Compositions, I heard no noise from the loudspeakers with the 300SEI connected to them and no music playing.

The THD + noise vs frequency curves (fig.7) show the 300SEI to have high distortion, particularly when driving low impedance loads. The curves were made, from top to bottom at 1kHz, with the 300SEI driving 4W into 2 ohms, 2W into 4 ohms, 1W into the simulated loudspeaker load, and 1W into the 8 ohm resistive load. With a 2 ohm load, the 300SEI produced a whopping 10% THD! With an 8 ohm loudspeaker, the 300SEI's distortion averaged less than 1% across the band. These curves highlight just how important it is to choose a loudspeaker with a highish impedance for use with a single-ended tube amplifier such as the 300SEI.

It's a common mistake to consider a single THD figure an indicator of distortion audibility. The THD+N figures in the previous graph sum all harmonics and noise for a single figure and ignore which harmonics are present and in what ratios. As you can demonstrate for yourself with the second Stereophile Test CD, 0.3% of seventh-harmonic distortion is more annoying than 10% of second-harmonic distortion. Generally, lower-order harmonics are less audible, as are even-order harmonics (second, fourth, sixth). The most benign harmonic distortion is thus second-harmonic.

With that in mind, look at fig.8, an FFT-derived spectrum of the 300SEI's output when reproducing a 50Hz sine-wave at 6W (6% power) into 4 ohms. The FFT shows the fundamental test tone at 50Hz, along with the individual harmonic-distortion components created by the 300SEI. The second harmonic is dominant, followed by the third, and so forth. The nasty-sounding odd-order fifth and ninth harmonics are suppressed in relation to the other distortion products. Because the distortion is primarily low-order, the 300SEI can get away with having several-percent THD. [While the distortion will be audible, it will be relatively musically consonant, which is not the same thing as being inaudible.—Ed.]

Another way of looking at an amplifier's distortion is to notch out the test-signal frequency and capture the remaining signal (the distortion) with a digital storage oscilloscope. Fig.9 is such a plot, with the test signal shown at the top and the distortion residue at the bottom. The trace shows the low-order nature of the 300SEI's distortion.

Fig.10 plots the 300SEI's distortion against output power into 2 ohms (top trace), 4 ohms (middle trace), and 8 ohms (bottom trace). The "knee" in each curve indicates at what power output (the...
horizontal scale) the amplifier goes into clipping. In solid-state amplifiers, clipping is often defined as the 1% THD level—or even as 3% THD, if you’re generous. But with high-distortion tube amplifiers that may have more than 1% or 3% THD well below clipping, defining when the amplifier actually runs out of power is more difficult. Into a 4 ohm load, for example, the Cary, is producing more than 1% THD at all levels above 1W!

The 8 ohm curve in fig.10 (lowermost trace) reveals that the 300SEI’s distortion shoots up at 8.3W and reaches 10% THD at 10.25W (10.1dBW). I suspect that Cary rates their amplifier outputs at 10% THD. Even using this criterion, the 300SEI didn’t quite reach the 11W rated output. The actual clipping powers are shown in Table 1. Note that the maximum output power didn’t change with both channels driven: the limiting factor is apparently the 300B output tube, not the 300SEI’s power supply.

Table 1: CAD-300SEI Clipping (10% THD+N at 1kHz)

<table>
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<th>Load ohms</th>
<th>Both Channels Driven</th>
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<tr>
<td></td>
<td>W (dBW)</td>
<td>W (dBW)</td>
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<td>8</td>
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</tr>
<tr>
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<td>9</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>113V</td>
<td>113V</td>
</tr>
<tr>
<td>2</td>
<td>4.3 (0.34)</td>
<td>113V</td>
</tr>
</tbody>
</table>

Table 1 (cont'd):

Increasing. Digital recording has an absolute limit (when the system runs out of bits) that, if exceeded, produces a horrible crunching sound. On the other hand, magnetic tape in an analog tape recorder driven into saturation compresses the signal, rolls off the upper treble, and adds some harmonic distortion. You can hear the overload, but it isn’t a catastrophic failure. Indeed, some recording engineers deliberately saturate analog tape to soften the sound.

Going back to the 300SEI, I suspect its graceful clipping and the low-order nature of its distortion let it get away with being driven into clipping without severe audible consequences.

The 300SEI’s intermodulation spectrum, made by driving the amplifier with a combination of 19kHz and 20kHz tones at 6W into 4 ohms (fig.11), showed a very high level of intermodulation distortion. You can see the entire series of IMD products, spaced at 1kHz across the band. The IMD spectrum when driving an 8 ohm load (not shown) revealed a similar-looking spectrum, but with the distortion products about 5–10dB lower in level. This behavior is undoubtedly audible.

Looking finally at the 300SEI’s reproduction of a 1kHz squarewave at a power level of around 1W into 8 ohms (fig.12), we can see just a hint of overshoot but a generally excellent shape. When driving the simulated loudspeaker load (fig.13), the squarewave has an odd shape that looks like a damped oscillation. The reactive nature of the simulated loudspeaker load gives the 300SEI more problems than does a simple resistive load. A 10kHz squarewave, again at 1W into 8 ohms (not shown) featured rounded edges associated with the 300SEI’s limited HF response, which we saw earlier in the small-signal frequency-response curves (a -3dB point at 30kHz into 4 ohms).

These squarewave responses, along with fig.1 (small-signal frequency response) and fig.4 (THD+N is frequency), suggest that the 300SEI will work best with a high-impedance loudspeaker that maintains a nearly constant impedance across the band, and one having no severe phase-angle swings. The more like a resistor the loudspeaker appears to the 300SEI, the better the Cary will perform.

(Headphones, for example, which feature a high, almost resistive impedance across the entire audioband, represent an ideal load for the Cary.—Ed.)

A Joke?

I could be kind and use the phrase “less than ideal” to describe the 300SEI’s technical performance. But I’ll tell it like it is: this amplifier measures so poorly it’s a joke. The large (more than 4dB) frequency-response aberrations when driving a reactive load, ridiculously high output impedance (more than 4 ohms), ultrahigh distortion levels, and severely limited output power are all contrary to what we consider good technical performance.

I can easily imagine the non-listening audio-engineering community looking at these measurement results and laughing at audiophiles who must “like the sound of distortion.” But after close critical scrutiny—both in the listening room and the test lab—I’m convinced that the 300SEI doesn’t harm the signal in some of the ways push-pull amplifiers do, and that what the 300SEI does right is beyond the ability of today’s traditional measurements to quantify. Further, I didn’t enjoy the 300SEI so much musically merely because it introduced frequency-response deviations and added lots of low-order harmonic distortion. Instead, the 300SEI’s fundamental musical rightness overcame its limitations.
CONCLUSION
For years I've cavalierly dismissed single-ended tube amplifiers on the basis of their poor measured performance, but the Cary CAD-300SEI integrated amplifier has opened my eyes to the glory of single-ended amplification. The 300SEI was a musical revelation, providing a totally involving and musically euphoric experience night after night. The 300SEI excelled in the most important areas: harmonic rightness, total lack of grain, astonishing transparency, lifelike soundstaging, and a palpability that made the instruments and voices seem to exist in the listening room. Beyond these specific attributes, the 300SEI communicated the musical message in a way that went straight to the heart.

This performance was, however, highly dependent on the loudspeaker the 300SEI was asked to drive. I was fortunate to hear the 300SEI driving the ultrasonic sensitive Infinity Composition P-FR with its powerful woofers. The Infinity was perfectly suited to the 300SEI and let this little amplifier shine. I can't emphasize strongly enough the need to pair the 300SEI with the right loudspeaker—of which there are very few. If you select an inappropriate loudspeaker, expect a mushy bass, rolled-off treble, closed-in soundstage, compressed dynamics, and low listening levels.

Even using the Infinity, however, I still had a few criticisms of the 300SEI. The amplifier's top octave was a little depressed, reducing the sense of air around the soundstage. The dynamics were adequate, but limited in relation to more powerful push-pull tube amplifiers and solid-state units. When driving the full-range KLH minispeakers, the 300SEI's bass was a little woolly.

The 300SEI had tremendous measured performance, with high distortion, deviations from flat response when driving real-world loudspeakers, and limited current delivery. But damn the measurements! The 300SEI was so musically satisfying that I don't care what the numbers say. My head tells me the 300SEI can't be any good; my ears and heart say this is the most involving and communicative amplifier I've heard—and a tremendous bargain at $3395.

You can count me among those converted to single-ended amplification. If you audition the Cary CAD-300SEI with the right loudspeaker, you too may be added to the growing legion.

5 I'm not going to be so charitable as RH. Given the fact that Stereophile would not recommend at all a loudspeaker that showed as unflat a response as the Cary when driving our standard simulated load, I don't regard this amplifier as a hi-fi product at all. It is actually a tone control, and an unpredictable one at that. —JA

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**SYSTEM**

Analog sources in my large room included a VPI TNT Jr. turntable with cost-effective upgrade and outboard flywheel on a Bright Star base and Townshend Seismic Sink mounted with the Graham 15-T/TC and Clearaudio/Souther TQ-1 tonearms. A VPI HW-19 Mk.IV with Stand-Alone Motor Assembly sitting on a Bright Star J-7 base mounted with a Clearaudio/Souther TQ-1 resides in my small room. Cartridges included the van den Hul MC-1 Super, Dynavector XXI-L low-output MC, Benz L04, Fidelity Research/van den Hul FR-1, Denon 103/van den Hul, and Denon S-1.

Digital front-end consisted of a PS Audio Lambda CD transport, Musical Design CD-2 player, and Sony TCD-D7 portable DAT recorder connected via coaxial (Mod Squad Wonderlink 1 and Audio Magic Sorcerer), TosLink, and Parasound ST ATX optical datalinks to one of two EAD DSP-7000 Series 3 D/A's.

**Audio Alchemy VAC-in-the-Box**

Audio Alchemy VAC-in-the-Box: Gain: 32dB, 50dB, or 60dB, selectable. Loading (resistive): 47kohms, 10kohms, 100 ohms, or custom. Loading (capacitive): 100pF, 270pF, or custom. S/N ratio: >96dB, THD/N distortion: <0.01%. RIAA accuracy: ±0.1dB.


**Gold Aero db45 Signature**


**Michael Yee Audio PFE-I**


**PREAMS IN HOUSE**

Preamps in house were the Audio Research L5 Mk.II, Threshold T2, and Boulder L5-2E line level units, and a Vendetta SCI-2C outboard phono unit. Power amps used were the Boulder 5000- AE, OCM 500, and Pass Aleph 0.

Speakers were wing-fitted Sound-Lab A-3s in my large room, and Avalon Eclipses in my small room. Interconnects included Straight Wire Virtuoso, AudioQuest Diamond, Synergistic Research Kalidoscope (balanced), and Esoteric Artus and WireWorld Eclipse, the last two both balanced and single-ended. Speaker cables used were Dunlavy Labs DLZ-8 with the Sound-Labs, and Synergistic Research Signature 2 and 3 with the Avalons, all in 8' lengths.

Other accessories included RoomTunes CornerTunes, EchoTunes, and Ceiling Clouds; Acoustic Sciences Tube Traps and Shadow Casters (in the small room); Arcici Levitation stand (in the large room); RoomTunes JustaRack, Arcici Superstructure 2, Soundstyle X053, and Billy Bags amp stands, with all major components on Bright Star Big Rock bases and Little Rock top plates; Shakti Stones; Sumiko FB-1 Fluxbuster; The Original Cable Jackets; Music and Sound ferrite beads; AudioQuest ferrite clamps; NoiseTrapper power strip; Synergistic Research power cords; TARA Labs RSC master power cords (with Pass Aleph 0); Coherent Systems EAU-1 Electroclear AC-line conditioner; AudioQuest record brush; Gryphon Exorcist system demagnetizer; Nitty Gritty record-cleaning machine; Radio Shack sound-pressure–level meter; Kleenmaster Brillianize CD cleaner; and Pete’s Wicked Summer Lager.

**AUDIO ALCHEMY VAC-IN–THE-BOX**

Most audiophiles wouldn’t expect too much from a $259 phonc preamp—after all, it costs less than many moving-coil cartridges. Of course, it’s gotta work, but anything beyond that is gravy.

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WorldRadioHistory
Sterephile, September 1995
must sound at least decent and have some flexibility. Audio Alchemy’s VAC-in-the-Box (the cute name stands for “Vinyl-to-Analog Converter”—I’ll try to avoid letting too many puns pop up) delivers far more than you’d expect from its name or its price. This preamp can supply enough gain with low noise to couple with low-output phono cartridges that usually would require a far more expensive phono stage.

**Design:** The VITB’s input circuitry consists of a differential pair of FETs operated with zero feedback and fed by a constant-current source. The FETs’ output is coupled to a Precision Monolithics OP275 op-amp, which acts as a low-impedance buffer to drive a passive filter that provides the HF pole of the RIAA equalization. An Analog Devices OP-amp supplies the rest of the equalization and servo circuitry. The VITB’s output is controlled by a servo system. Both left and right channels have individually regulated power supplies. Polystyrene and metalized polypropylene caps are used for all critical filters in the audio path. Low-impedance electrolytic caps are selectively implemented elsewhere in the circuit where necessary. The VITB can be upgraded by using AA’s beefier Power Stations Two or Three power supplies.

**Sound:** So what does $259 get you in the way of sonics? Don’t expect to see God—she’s not quite within reach. You will get a glimpse, albeit somewhat hazy, of the lower levels of the firmament. Almost all of the VITB’s faults are sins of omission. Resolution was slightly better than fair, with some homogenization of low-level detail and information. Harmonic balance was very good, with no solid-state glare or midrange suckout. Top-end air was somewhat reticent, and depth was truncated. Dynamics with the supplied Standard Power Station were passable but not exciting.

The VITB isn’t going to give you hi-fi thrills and chills, but it will give you most of the music in a palatable form. The lateral soundstage, while not Lilliputian, was quite a bit less expansive than produced by my reference, the 10-times-the-price (when it was available) Vendetta SCP-2C, designed by John Curl. Also, the front of the VITB’s soundstage was glued to the front grilles of the speakers, while the Vendetta’s stage began several feet behind the transducers.

Listening to a brand-new acquisition, Classic Records’ reissue of RCA LSC-2446—Fritz Reiner’s and the CSO’s performance of Rimsky-Korsakov’s Scheherazade—dramatically brought home the differences between the VITB and the Vendetta. This is a ravishing record, with the kind of sound that turns even hardened reviewers like me into sputtering pools of jelly. Through the VITB, I thought nice record—the disc sounded natural and was very pleasant. Then I listened through the Vendetta. Holy Moly! I melted in my chair. I could hear the huge soundstage, cavernous depth, exquisite top-end air, and incredible amount of inner and low-level detail available on this disc. Through the Vendetta I was transported to a place where I could no longer review equipment—I had to listen to the performance all the way through. With the VITB, I could only vaguely begin to grasp this recording’s greatness. Everything sounded very nice, but the VITB just didn’t have the resolution to fully explore Scheherazade’s sonic nooks and crannies.

At the opposite end of the musical spectrum, Wayne Kramer’s new release, *The Hard Stuff* (Epitaph 86447-1), is chock full of nasty Stratocaster crunch and grind. Through the VITB there just wasn’t enough of a hard edge to lay me back in my chair. Again, nice record; but this particular record shouldn’t sound nice—anymore than a rottweiler should make a good lap dog. Gone was some of the transient speed that makes this disc kick butt.

Perhaps I’m being too hard on the VITB—too much like a frustrated rocker whose axe doesn’t put out the sound he longs for. This unit still represents a giant step forward in entry-level phono gear. It can handle low-level carts without excessive noise, and it doesn’t sound nasty. Couple the VITB with a SOTA Mooribeam or Sumiko Project One turntable, and for less than $600 you’ve got yourself a nice entry-level analog rig.

Could this alone spark an analog revival? No, but it could allow a lot of people to get a glimpse of what the fuss is all about: music that sounds pleasant to the ear. The VITB would also be perfect for an audiophile who wants to add vinyl capabilities to a video or second system.

**Measurements from JA:** The VITB doesn’t invert polarity. Its input impedance measured 47.7k ohms with it set to 47k; its output impedance was a fraction under 100 ohms across the band, meaning that it won’t have problems driving preamps with low input impedances. The measured gain was pretty much to specification, at 32.25dB (“32dB”), 51.3dB (“50dB”), and 59.9dB (“60dB”). In its highest, 60dB gain setting, suitable for use with low-output MC cartridges, the unweighted signal-noise ratio referenced to an input level of 500µV at 1kHz was a moderate 50dB in the right channel, a not-so-good 40dB in the left (inputs shorted). These figures improved to 59dB and 50dB when A-weighted, suggesting that the noise is primarily low- or high-frequency in nature.

The VITB’s RIAA error (fig.1) was very low in the right channel but featured shelfed-down highs in the left. Channel separation (not shown) was excellent at better than 80dB above 300Hz. Distortion in the highest-gain mode was generally below the noise in the midrange and below, but rose to around 0.2% at 20kHz with a 3mV input level, which is inconsequential. The unit’s overload margins—assuming use with an MC cartridge in the 50dB and 60dB modes and an MM cartridge or high-output MC in the 32dB mode—are generally excellent (see Table 1), the only exception being the 20kHz figure in the low-gain mode. While recorded music—signal levels of +6dB at 20kHz are rare, the sounds of LP ticks and cracks might be accentuated by added distortion when a high-output cartridge of around 5mV/cm/s sensitivity is used with the VITB in its low-gain mode. There would be no problem using a less-sensitive MM cartridge or a typical MC cartridge with the VITB’s higher-gain modes.

In my opinion, Audio Alchemy’s VITB gives its owner a lot of performance at a very affordable price. —John Atkinson

**SS Summarizes:** While Audio Alchemy’s VAC-in-the-Box won’t replace my reference Vendetta unit, it would be a wonderful starter unit for anyone who wants to begin exploring the wonders of analog reproduction. It’s flexible enough to allow a variety of connections and adjustments, yet it is easy to use and provides a wide range of performance options. Overall, I would recommend this unit to anyone looking for a good entry-level phono preamp at an affordable price.
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—Steven Stone

GOLD AERO dB45 SIGNATURE

It’s somewhat paradoxical that the first product from a company known for their premium tubes should be a solid-state phono section. Life is like that. Gold Aero’s $799 dB45 phono stage—the “Signature” version costs $999—is the brain child of Bob Hovland and Peter Russell. Their goal was to create a medium-gain phono preamp suitable for use with a variety of MC cartridges for a reasonable price.

**Design:** The dB45 is a single-gain-stage phono unit, with its discrete-transistor, class-A circuit laid out on a small printed circuit board. It has no separate output stage to increase gain or buffer the output. Gold Aero claims that the dB45 is quieter than other 45dB-gain units, because there’s no long-tail or differential pair to add noise. RIAA equalization is accomplished in the feedback loop. In the standard model, the capacitors in the audio circuit card and RIAA circuit are polycarbonate film and foil types. Discovery wire is used for all connections in the audio circuit.

The “Signature” version, which I reviewed here, costs $200 more and employs expensive Caddock MK 132 resistors in the audio circuits. The dB45’s voltage rails are regulated with a dual-tracking ± 15V circuit. Inside the dB45’s separate power supply is a three-position switch that adjusts the line voltage, for international use.

Gold Aero opted for external plug-in RCA jacks rather than an internal DIP-switch arrangement for setting load impedance. The unit comes supplied with 100 ohm, 1000 ohm, and 47k ohm jacks for MC loading, and it’s easy for users to configure their own custom resistor loads. Gold Aero believes the RCA jacks are sonically superior to DIP switches, and also make it easier to quickly change loads to fine-tune resistance “by ear.”

**Sound:** The first question that crossed my mind when I looked at the specifications on the Gold Aero dB45 was: Does it have enough gain for low-output moving-coil cartridges? A gain of 45dB isn’t usually sufficient to handle your average 0.3 or 0.4 mV output cartridge.

I was surprised to discover that the dB45 is quite capable of handling even a Dynavector XX-IL (0.25 mV) without excessive noise. While the dB45 may not have tons of gain, it is an extremely quiet circuit, so the apparent signal/noise ratio is quite high. You all need to generate high volume levels is a line-level preamp with enough gain. Both the Threshold T2, with 18dB of gain, and the Audio Research LS-5 MK II, with 33dB of gain, were able to supply adequate volume for any symphonic or rock selection in my collection. If you use a passive preamp in your system, the dB45 may not get you to adequate listening levels; but Gold Aero promises a dB60, with a 15dB-gain tube output stage, in the near future intended specifically for passive-preamp owners.

So how did the dB45 sound? Damn fine by my standards. While not quite the sonic equal of my reference Vendetta SCP-2C in the areas of dynamics and soundstage size, the Gold Aero was exceedingly natural and articulate. I was amazed at the dB45’s ability to resolve low-level details and hang together even during exceedingly dynamic passages. For example, in the opening movement of Kiril Kondrashin’s and the RCA Victor Symphony Orchestra’s performance of Kabalevsky’s *The Comedians* (Classic Records reissue of RCA LSC-2398), I had no difficulty differentiating the percussive upper-register melody lines of the xylophone from those same notes doubled on the piccolo. Neither did the overall orchestral spectral balance change, regardless of the dynamic level or complexity of the music.

While *The Comedians* sounded slightly more dynamic through the Vendetta SCP-2C, the dB45 was no slouch in this area, only slightly less bold. I should mention that dynamic contrast is one of the Vendetta’s most impressive attributes. Recently I briefly auditioned Klyne’s latest phono stage, the 7PX3. The Vendetta sounded somewhat mechanical, more electronic, and a bit less musical than the Klyne; but when it came to dynamic impact and transient speed, the Vendetta bested the Klyne, which had a slightly soft, overly relaxed presentation of transient detail. While the Klyne had excellent inner detail and grainless textural definition, it seemed to lack low-level dynamic contrast and transient snap compared to the Vendetta.

The dB45 did a very credible job in the areas of space and air between instruments and background quietness. While the dB45’s background wasn’t as “dead” as that of the Vendetta, it still added very little electronic grain to the background textures of the music. On Rickie Lee Jones’s “Jolie John,” from her *Traffic from Paradise* LP (German Geffen GEF 24602), the Gold Aero made it easy to differentiate between Leo Kottke’s and Sal Bernardo’s acoustic guitar timbres. Jones’s voice had no grain or “fur” around it, even when she was pushing out highly dynamic transients.

I often found that the Gold Aero actually sounded slightly more natural than the Vendetta on acoustic material, such as *The Pleasures of the Royal Courts*, by the Early Music Consort of London (NonCLASSIC H-71326). While the Vendetta made large-scale music sound bigger and more spectacular than the dB45, on intimate material the Gold Aero had a natural ease that slightly bettered the Vendetta.

The dB45’s depth and three-dimensionality were excellent. For example, the hall reverberance and bloom of the room acoustics on the Hilliard Ensemble’s *Medieval English Music* (Harmonia Mundi HM 1106) came through the Gold Aero...
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Vocalists had real three-dimensional form and substance, without becoming bloated or homogenized. For example, I could easily follow the complex polyphonic vocal lines of "Singularis Laudis Digna," since each vocalist had a distinct, fixed spot in three-dimensional space. Even on arguably over-reverberant recordings—such as Schubert's Trio No. 1 in B-flat, Op. 99, featuring Joela Jones on piano, Daniel Majeski on violin, and Richard Weiss on oboe (Chamber CR-12891)—the Gold Aero separated the instruments from their reverberant surroundings in a natural and completely believable way.

The dB45 also did a credible job harmonically throughout its frequency range. The top end was airy and sweet and did not change character during high-velocity passages. The midrange was natural, without any glare or suck-out. The bass, while not as explosive as the Vendetta, was still well-defined, with adequate weight and impact. I was impressed by the balanced nature of the dB45's harmonic presentation—no part of the frequency spectrum stood out or integrated poorly.

**Measurements from JA:** The Gold Aero doesn't invert polarity. Without any loading plugs used, the dB45's input impedance measured 108k ohms. Its output impedance varied significantly with frequency, perhaps due to an undersized coupling capacitor. A low 160 ohms at 20kHz, the impedance rose to a still moderate 1050 ohms at 1kHz but was a whopping 13k ohms at 10Hz. The Gold Aero should not be used with preamps having input impedances of less than 100k ohms if its sound is not to become too lean.

The preamp's gain at 1kHz was to specification at a measured 44.98dB. A typical MC input level of 500μV at 1kHz will give an output of 88.7mV; the standard MM level of 5mV will give 887mV (within the overload margins of line-stage preamps using active volume controls). The dB45 was also very quiet, its unweighted S/N ratio measuring 61.3dB (left) and 59.2dB (right) with respect to a typical MC input of 500μV at 1kHz. These ratios improved to 70.6dB/70dB when A-weighted. With a typical MM cartridge, of course, the preamp's noise floor will be 20dB lower. Incidentally, I found the dB45's noise performance very critical regarding the grounding arrangement used. Floating its inputs and just grounding the outputs resulted in high levels of hum injected into the signal.

The Gold Aero's RIAA error (fig.2) was within +0.19dB between 20Hz and 20kHz, which is excellent. Above the audio band, however, the error progressively increased with frequency, due to the feedback equalization topology used. (The circuit has a minimum gain of unity, which means that the equalized response can't drop below that figure even though the RIAA's HF rolloff should continue out to infinitely high frequency.) The dB45's channel separation was also excellent, at better than 90dB across most of the midrange and treble, and never dropping below 85dB.

Distortion levels were very low across the band, even when driving the preamp with a high 10mV signal at 1kHz. The overload margins (Table 2) were all excellent; even with a high-output MM cartridge it will be unlikely that the Gold Aero will be driven into clipping. Fig.3 shows how the distortion and noise content change with increasing signal level at three frequencies: 20Hz (left), 1kHz (middle), and 20kHz. The sloping nature of each curve's left-hand side implies that the measurement is actually dominated by a constant level of noise rather than distortion products. Only above the "knee" in each curve are we looking at distortion.

Apart from its high output impedance in the midrange and below, and its fussiness over grounding—both of which will mandate extremely careful system-matching—Gold Aero's dB45 is a well-engineered preamplifier, capable of coping with both moderate-output MC cartridges and MM cartridges. Impressive.

—John Atkinson

**SS Summarizes:** The more I listen to the Gold Aero dB45, the more impressed I am by its ability to credibly and accurately unravel the RIAA curve. While perhaps not the ultimate phono preamp in terms of dynamic contrast, soundstage dimensions, or sheer unabashed musicality, the dB45 still attains a level of overall performance that makes it an outstanding value. I could easily live with this preamp, as I dare say could most Stereophile readers. My only caveat about the dB45 is that you must have a preamp with adequate gain to drive your system to proper output levels—passive units need not apply. Certainly a must-audition if you're looking for an under-$1000 phono preamp. —Steven Stone

**Michael Yee Audio PFE-1**

While Michael Yee's name may be new to you, he's been designing and manufacturing audio gear for several years. He was responsible for Mobile Fidelity's shortlived "Ultraplone" line of electronics. Intended to be sold by mail-order, the line was less than spectacularly successful. Problems with quality control, reliability, and parts availability made it a blessing that almost none of those pieces ever made their way into the hands of the public. While some of the circuit topology originally developed for the Ultraplone electronics has found its way into Michael Yee's current products, these are by and large new designs from stem to stern.

All of Michael Yee's products utilize the concept of what he terms "Tonal Imaging" as a fundamental design parameter. According to Yee, tonality and imaging are not two separate parameters, but are intimately related. In his product literature, Yee uses the example of the sonic differences between tube and solid-state amplifiers and concludes, "What appears to the ear as a difference in frequency response is actually a difference in imaging."

He attributes most of these imaging differences to differences in phase response, and devotes a great deal of energy to eliminating phase anomalies from his designs. But the bottom line on any design is not what the designer writes about the design, but whether it delivers more sonic value for the money than...
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other devices of similar cost. “Tonal Imaging” aside, Michael Yee Audio’s PFE-1 does promise a lot for $900.

**Design:** The dual- mono PFE-1 (Phono Front End One) is a single-stage design with only one “gain block” that uses 14 transistors, including a “super-matched,” LM394, low-noise transistor pair at the front end. The PFE-1 is direct-coupled and has no capacitors in the signal path. Instead, it uses a DC correction circuit based on a TL072 dual-op-amp chip to block DC.

To accomplish the RIAA-equalization curve, the PFE-1 uses something called a “phase-compensated feedback system.” According to Yee’s technical literature, this circuit “…has a response pole for every zero and a zero for every pole caused by the RIAA equalization network. This insures it [is] always in phase at the feedback summing junction.”

Gain is user-selectable via internal switches, with choices of 40dB, 50dB, or 60dB. Impedance is also user-selectable, with 60 settings from 15 ohms to 100k ohms available via banks of DIP switches. The PFE-1 features a fully regulated remote power supply with 8800µF of capacitance.

**Problems:** I’ve had three incarnations of the PFE-1 in my system over the past six months. The first unit had a problem with highly microphonic RCA jacks. If I rubbed the output connectors, it sounded like I was fondling a microphone. Back to Sunnyvale with that number.

The second unit had problems with RF noise —periodically one channel would erupt in crackling. Another one-way trip to Sunnyvale. The third unit, which I’ve had for about three months, has behaved perfectly. [But see later.—Ed.] Since I use baseball rules—three strikes and you’re out—it’s fortunate for Michael Yee that this piece has performed flawlessly. Otherwise, it would have been back to the minors.

**Sound:** The PFE-1 very easily picks up hum from radiated magnetic fields. It must be at least 3’ away from its power supply, the VPI PLC unit, or any line-stage preamps with internal power supplies. But the PFE-1 isn’t the first phono preamp I’ve auditioned that easily picks up hum. You will, however, need to spend time finding an ideal location to minimize the effects of other devices on its noise floor.

If I had to choose the Gold Aero dB45 or the Michael Yee PFE-1 as the better performer, I’d be stymied. Just like the Gold Aero, the PFE-1 is the sort of product that makes it difficult from a value-dollar basis to justify most of the hyper-expensive phono preamps on the market. The high-resolution PFE-1 was only slightly inferior to the Vendetta in its retrieval of low-level information. With 15dB more gain available, the PFE-1 is likely to fit in more systems than the dB45.

While the internal DIP switches were a bit bothersome to access—you’ve got to unscrew a mess of tiny hex screws to remove the top plate—the incremental changes in loading values were a delight. You can go from 4Ω to 45Ω to 48Ω to 50Ω to 53Ω ohms to … you have 60 choices, all available at the flip of a few switches. It’s not Michael Yee’s fault if you don’t get your cartridge loading spot-on.

While the dB45 was the most natural-sounding phono preamp I’ve heard this side of a Klyne 7PLX, the PFE-1 is the quietest unit I’ve heard next to the Vendetta SCP-2C. Like the Vendetta, background noise was virtually nil, with music coming from a void marred only by the record’s own surface noise.

Soundstage dimensions on the PFE-1 were only slightly smaller than those of the Vendetta, but depth rendition was virtually identical. On Charles Ravier

Original image of Polyphonique de France's performance of XIX Chansons Nouvelles de la fature et composition de maître Clément Jenequin (Astrée AS 3), each voice used its own, distinct location in three-dimensional space. Even during the most complex musical passages, I could easily follow an individual part in the composition.

While the PFE-1 was perhaps not quite as dynamic as the Vendetta, it still did a very credible job on dynamics. For example, it did a superb job of transmitting the microdynamics of Jack DeJohnette’s subtle drum work and Eddie Gomez’s hyper-melodic bass on Bill Evans’ *At the Montreaux Jazz Festival* (Classic Records/Verve V6-8762). On heavily modulated grooves, such as New Order’s *Blue Monday* (Factory Factus 10), however, the PFE-1 began to sound slightly hard on the dynamic peaks—especially when compared to the Vendetta or the hyper-suave Klyne. And the Gold Aero dB45 handled extreme dynamic passages better than the Yee, which sounded slightly hard when pushed.

Harmonically, the PFE-1 was well-integrated, with good balance between all the parts of the musical spectrum. When compared to the dB45, the Michael Yee sounded slightly more mechanical, but also had a hair more definition. Bass extension through the PFE-1 was very good, with almost the same level of dynamic impact and precision as the Vendetta SCP-2C.

The PFE-1 is sonically very much like my reference Vendetta, only with a less suave sound during heavily modulated passages, and not quite as wide a soundstage. The PFE-1 was excellent at unravelling inner details while still rendering a credible and musically natural harmonic balance between instruments.

**Measurements from JA:** The Yee preamplifier showed rather more RIAA error (fig.4) than the other two models reviewed here. This error was also different from channel to channel and varied with the gain setting. Fig.5, for example, shows the RIAA error with the gain set at 5mV at 1kHz input (right channel dashed, 0.5dB/vertical div.).
to its maximum: the response is down an audible 2–3dB at 20kHz. Crosstalk was low, however, dropping from -77dB at 100Hz to below -100dB above 10kHz. The PFE-1 doesn’t invert polarity.

While the right channel’s THD+noise figure in fig.6 was respectively low, the left channel became increasingly and alarmingly non-linear below the high treble. The preamp’s output impedance also measured very different from channel to channel: the right channel featured a low 105 ohms or so across the band; by contrast, the left channel was a whopping 100k ohms! Something was obviously very wrong with one of the PFE-1’s channels. I completed my measurements on just the right channel, therefore, which I assumed to be typical of how the preamp should behave.

The preamp’s gain could be adjusted from 41.8dB, suitable for use with MM cartridges, to a maximum of 56.5dB. I found it to be pretty quiet, the unweighted S/N ratio for the right channel in its low-gain mode measuring 63.3dB referred to 5mV input at 1kHz. This improved to 77.1dB, A-weighted.

The overload margins (Table 3) were generally good, assuming MM cartridge performance for the lowest-gain setting and MC performance for the highest-gain setting. The one exception was at low frequencies in the low-gain mode, implying it might be possible for disc warp information to overload the preamp. The actual curves of the Michael Yee’s right-channel THD+N against input level in the maximum- and minimum-gain modes are shown in figs.7 and 8. Note the strange sawtooth profile to most of the curves: observing the waveform on an ‘scope while I was performing these measurements revealed some apparent instability at some input levels but not others.

While the technical performance of the Michael Yee PFE-1 was good in some areas—noise, crosstalk—it was worrisome in others, particularly in the way the RIAA error depended on the gain setting. And frankly, given that this was the third sample SS had received for review and it, too, appeared to have broken during the review period, this doesn’t bode well for the PFE-1’s reliability in the field.

—John Atkinson

SS Summarizes: While the PFE-1 requires very careful setup to minimize the effects of radiated hum from other components, the final result is worth the effort. I immensely enjoyed my time with the Michael Yee Audio PFE-1. It has enough gain with low noise to deal with any low-output moving-coil available. I especially liked its flexibility when it came to setting the resistance load for a cartridge.

—Steven Stone

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**Table 3** Michael Yee Audio PFE-1 phono preamplifier:

<table>
<thead>
<tr>
<th>Input Overload (1% THD+N)</th>
<th>20Hz</th>
<th>1kHz</th>
<th>20kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain Voltage Margin</td>
<td>12.5dB</td>
<td>70mV</td>
<td>19.1dB</td>
</tr>
<tr>
<td>Voltage Margin</td>
<td>22.9dB</td>
<td>450mV</td>
<td>21.9dB</td>
</tr>
<tr>
<td>Minimum Resistance Margin</td>
<td>0.57mV</td>
<td>21.1dB</td>
<td>100mV</td>
</tr>
<tr>
<td>Maximum Resistance Margin</td>
<td>6.2mV</td>
<td>21.9dB</td>
<td>100mV</td>
</tr>
</tbody>
</table>

---

**Fig.5** Michael Yee PFE-1, maximum gain, RIAA error at 0.5mV at 1kHz input (right channel dashed, 1dB/vertical div.).

**Fig.6** Michael Yee PFE-1, minimum gain, THD+noise vs frequency at 10mV input at 1kHz (right channel dashed).

**Fig.7** Michael Yee PFE-1, maximum gain, THD+noise (%) vs input voltage (from left to right): 20Hz, 1kHz, and 20kHz.

**Fig.8** Michael Yee PFE-1, minimum gain, THD+noise (%) vs input voltage (from left to right): 20Hz, 1kHz, and 20kHz.
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It is becoming increasingly clear that datastream timing variations (called “jitter”) in digital audio systems are a significant source of sonic degradation in digitally reproduced music. As we gain experience in listening to low-jitter systems and build a database of jitter measurements, we can begin to describe with greater certainty how jitter affects the sound.

In listening tests in which all the variables are held constant except the amount of word-clock jitter at the digital processor's clock, we can isolate jitter's contribution to “digital” sound. An example of such a test was my experience with the Sumo Axiom transport and Sumo Theorem processor described in the June ’95 Stereophile (p.113). Connecting the separate clock line between this transport/processor combination made a big difference to the sound—and to the amount of measured jitter in the Theorem.

In my experience, jitter manifests itself largely as a hardening of midrange and treble timbres. Rather than sounding liquid and natural, as they do in reality, instruments take on a synthetic, sterile edge. High-frequency transients have an unpleasant character, like a small burst of white noise on the leading edge. I hear this clearly in vocal sibilance, the jittered reproduction sounding husky and spitty rather than clean and natural. The sound of a piano is also revealing: a jittered digital system adds a glassy glare to the attack of each note. In addition, cymbals become aggressive and sound as if overlaid with white noise.

In the bass, jitter softens the low-frequency presentation, diluting the music's pace and rhythm. Jitter obscures the sense of low-frequency pitch, making it harder to hear exactly what the bass player is doing.

Jitter greatly affects soundstaging, removing the sense of air and bloom surrounding instrumental outlines. The impression of objects hanging in threedimensional space is reduced, with the soundstage becoming flatter and more homogenized. The soundstage also loses its transparency, sounding thicker and more opaque. Fine detail at the back of the soundstage is obscured rather than resolved. Finally, jitter reduces the sense of expansive space and makes the recorded acoustic sound smaller.

Unfortunately, jitter-reduction boxes such as the new Audio Alchemy DTI v2.0 reviewed here can only go so far in reducing jitter. Once these devices have received and cleaned up your transport's output, they must put the signal back into S/PDIF format, which can reintroduce jitter. Further, the S/PDIF signal must be decoded inside your processor, which adds even more jitter. Consequently, the jitter busters that go between a transport and processor may reduce jitter, but they don't eliminate it.

What's a music-lover to do? There are three strategies: 1) buy a processor with a sophisticated reclocking scheme built into it; 2) buy a transport and processor pair that have a separate clock link; or 3) transmit the cleaned-up signal to a processor in a form other than the standard S/PDIF format.

Audio Alchemy has taken this last approach by providing their products with a data-transmission format called PS (pronounced “I squared S”). Jitter is introduced in the S/PDIF (and AES/EBU) formats primarily because the clock signal is buried in the audio data and transmitted on a single conductor. In the PS format, the clock is carried on a separate conductor from the audio data, with no need to “recover” the word clock and reintroduce jitter.

As the DTI v2.0 jitter attenuator has an PS output, I was able to audition it both with several D/A processors connected through the standard S/PDIF interface, and through the PS bus with Audio Alchemy's $795 DDE v3.0 digital processor (reviewed last month).

DESCRIPTION
The DTI v2.0 looks just like Audio Alchemy's other products: a small black box with rounded sides, outboard power supply, and an LED-laden fascia. The front-panel pushbuttons select between the DTI v2.0's three inputs and invert the absolute polarity. A pair of LEDs indicates when the v2.0 is locked to a source, and when it's in the “double-locked” jitter-reduction mode.

Standard digital inputs are AES/EBU, coaxial on a BNC jack, and TosLink optical. The TosLink input can be replaced with an ST-type optical input for an additional $179. Output is via coaxial (again on a BNC jack), AES/EBU, or PS bus. An RCA-to-BNC adaptor is supplied with the DTI v2.0.

Audio Alchemy's Power Station Four supplies DC to the unit. Inside the DTI v2.0, two TO-220-package regulators and seven TO-92 regulators provide nine separate voltage supplies.

The DTI v2.0 is essentially an Audio Alchemy DTI Pro without the Pro's “resolution enhancement” signal processing. The v2.0 receives a digital input

1 See my review of the DTI Pro in Vol.17 No.11.
The Sans Pareil, truly a labor of love, takes the sonic potential of the Futterman circuit to the limit of imaging magic. I know of no finer conduit for recreating the illusion of live music in the home... Dynamics, low-level detail resolution, and tonal balance are firmly class A in performance.

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Stereophile Vol. 15 No. 6, June 1990

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signal, and relocks that signal at the output for presumably lower jitter. The circuit is based on a Crystal CS8412 input receiver, but with a secondary Phase-Locked Loop for lower recovered jitter. The only difference between the DTI v2.0 and the DTI Pro's jitter-reduction circuitry is the brand of voltage-controlled crystal oscillator in the second PLL. The v2.0's oscillator can reportedly be "pulled" further off its frequency, thus allowing it to lock to transports that may deviate from the 44.1 kHz sampling frequency. This new oscillator reportedly solves the DTI Pro's problem of not double-locking to some transports. Audio Alchemy claims the v2.0's jitter reduction is identical to that of the DTI Pro.2

For comparison, the original DTI I reviewed back in May 1993 had no secondary lock, instead relying on the jitter-reduction performance of the Crystal CS8412, which was better than that of the Yamaha YM3623 receiver widely used in digital processors at the time. In my review of the DTI, I found that it improved the performance of some transport/processor combinations but degraded the sound of others. When we were able to measure the DTI's effects on jitter some months after my review, the measured jitter performance correlated exactly with the listening impressions. Specifically, some digital processor/transport combinations had lowered jitter with the DTI, some higher.3

SYSTEM
I tried the DTI v2.0 with a variety of transports and processors, ranging from Audio Alchemy's $159 DAC/MAN converter to the magnificent Spectral SDR-2000 Pro (which has a ultra-sophisticated reclocking circuit). The DTI v2.0 also saw time in front of Adcom's GDA-600 and Audio Alchemy's DVE v30 converters. transports included a Mark Levinson No.31 ($8450), Theta Data Basic ($1750), and a Sumo Axiom ($899). Digital interconnects were an AudioQuest Diamond x3 (AES/EBU), Parasound DataBridge (coaxial), Audio Alchemy DST (coaxial), and a generic TosLink optical link. I also used the DTI v2.0's IFS bus output to drive the IFS bus input on the DDE v3.0.

The digital front-ends fed an Audio Research LSS Mk.II preamp, which drove a pair of Audio Research VT150 tubed monoblocks. Loudspeakers were Genesis II.5x powered in the bass by the Genesis 800W integral woofer servo amplifier. AC power to the front end was conditioned by a Tice Power Block, and an MIT Z-1 was plugged into the AC system. Analog interconnects were Magnan Type V, AudioQuest Diamond x3, and AudioQuest Lapis. Loudspeaker cables were AudioQuest Dragon II.

LISTENING
I starting by comparing the Mark Levinson No.31 driving the Adcom GDA-600 directly, then through the DTI v2.0, with AES/EBU in every datalink (Diamond x3). As good as the No.31 was on its own, the sound improved with the DTI v2.0. The biggest improvement was in the sense of air and transparency, the soundstaging opening up to greater depth. The impression of instruments hanging in space was heightened, primarily from the extra sense of bloom around image outlines. I could "see" into the recorded acoustic more easily with the DTI v2.0, and lower-level detail was better resolved.

In addition, the No.31/GDA-600 pair had a tighter, better-defined bass presentation with the DTI v2.0. Victor Wooten's fabulous bass playing on the Béla Fleck CDs was better articulated and had more snap and drive with the v2.0 in the system. The DTI v2.0 made the extreme bottom end leaner and punchier, in contrast to my impressions of the DTI Pro, which added weight to the bottom octaves.

I wouldn't call the improvement rendered by the DTI v2.0 "large"; rather, the difference was marginal but noticeable.

Moving on to the Theta Data Basic transport, I heard a bigger improvement in the Data Basic/GDA-600 pair than I had with the No.31 transport.4 The Data Basic's excellent bass presentation improved in the ways described above when auditioning the No.31, but the biggest difference was in the soundstaging. The music opened up and became more expansive, with a greater sense of air and case.

The Theta's treble, which was already smooth and clean, took another step forward in liquidity and timbral rightness. Interestingly, the treble was more incisive and detailed with the DTI v2.0, yet it didn't become overly aggressive or etched. I should note that both the Adcom GDA-600 and Theta Data Basic have somewhat laid-back treble presentations, which benefited from the DTI v2.0's ability to increase definition in the treble.

With the Sumo Axiom transport, the DTI v2.0 produced changes similar to those heard with the other transports. The Axiom sounded considerably less good than the Theta Basic, and benefited the most from the v2.0. Even with the DTI v2.0, the Axiom didn't sound nearly as good as the Data Basic without the v2.0. My experience with the Axiom reinforced my previous opinion of jitter-reduction boxes: they're no substitute for a good transport.

Interestingly, the DTI v2.0 didn't eliminate the different transports' sonic characteristics. Instead, the No.31 still sounded like the No.31, the Data Basic was still the Data Basic, and the Axiom was unmistakably the Axiom. The v2.0 must therefore pass the transport's jitter signature to the v2.0's digital output. A perfect reclocking device would be immune to the transport's jitter, and its own output jitter signature would dominate the sound. This was also suggested by my finding that the input cable to the DTI v2.0 made a difference to the sound.

I-SQUARED-S
Next up was Audio Alchemy's DDE v3.0, connected alternately to the DTI v2.0 through coaxial link or the IFS bus. The DDE v3.0's remote-controlled input-switching let me stay in the listening seat and listen back and forth between coaxial and IFS connection.

Starting with the coaxial connection, the DTI v2.0 rendered a much greater improvement to the sound than I heard with the GDA-600, regardless of what transport was used. Where the DTI v2.0 made a clear but marginal improvement to the GDA-600, it significantly improved the DDE v3.0 via the coaxial S/PDIF connection.

But switching to the IFS connection, the improvement was nothing short of dramatic. There was a huge increase in soundstage transparency, depth, space, air, and expansiveness. Low-level detail seemed to come alive; what had been

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2 Note that the DTI v2.0 passes 16-bit data through intact, which means it won't affect the HiFiCI® control code inserted in the least significant bit of the 16-bit audio words. On the DTI Pro, you must have the latest software and configure the unit via front-panel controls to avoid destroying the HiFiCI® control code.

3 See my review of the DTI in Vol.16 No.5. The jitter measurements appeared in Vol.16 No.11.

4 While we're on the subject, I must reiterate what a great value the Data Basic is. This is a terrific-sounding transport for a very reasonable price. (See my review in Vol.17 No.3.)

5 It is a little-recognized point that word-clock jitter is an additive phenomenon. Once jitter has been introduced into a digital datastream, it can never be eliminated, only low-pass-filtered. The common phase-locked loops used to recover and relock the data, for example, pass almost all the audio-band jitter, while even the double loops used by Meridian and Audio Alchemy will still pass some low-frequency jitter. However, if the filter corner frequency is low enough—for example, the FIFO buffer in the Mark Levinson No.305 has an equivalent time constant of one-eighth of a second—and the filter rolloff steep enough, only subsonic drift in the word clock will remain. Whether or not that is the same as completely eliminating the jitter remains to be seen (though Meridian's Bob Stuart tells me that it isn't)
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indistinguishable sounds became tangible instruments. There was just more music there with the PS connection, and I could hear more of what was going on in the arrangement. Small musical details only hinted at without the v.2.0 were suddenly vivid and immediate. Instruments occupied more precise locations in the soundstage and had sharper image outlines. The v.2.0 was like a focus control on the soundstage, snapping everything into a clearly defined and separated whole.

I also heard a newfound sense of air and bloom around instrumental outlines, which made the soundstage more natural and less synthetic. On Robben Ford’s vocal on his *Robben Ford and the Blue Line* (Stretch STD-1102), I could hear more reverberation around the vocal, and the voice was better focused between the loudspeakers. Further adding to the soundstage performance with the v.2.0, the recorded acoustic seemed more expansive. I could hear Eric Marienthal’s sax on Mike Garson’s *The Oxnard Sessions, Volume Two* (Reference RR-53CD) light up the hall, and I could actually hear reflections from the walls. Without the v.2.0, the soundstage was smaller, the sax was less far back in the hall, and the instrument had less air around it.

While the improvements I’ve described with the other processors were moderate, the DTI v.2.0/DDE v.3.0 combination with the PS connection was a big leap forward in sound quality. In fact, the DDE v.3.0 linked to the DTI v.2.0 had many of the qualities I hear in the most expensive processors—particularly resolution of spatial detail. Once you hear the v.3.0 with the DTI v.2.0 and the PS connection, you won’t want to go back.

**Spectra**

Finally, I tried the DTI v.2.0 between the No.31 transport and the Spectral SDR-2000 Pro processor. Despite the SDR-2000 Pro’s highly sophisticated reclocking circuit, its sound is still affected by transports and digital interconnects. Part of this variability is probably due to the Pro’s extraordinary resolving power: it acts like a microscope on the input data. With the v.2.0 in front of the Spectral, the sound changed, but I couldn’t say it was for the better. Contrary to my experiences with the other processors, the Spectral’s bass became flatter and less defined with the v.2.0. There was also an odd feeling that something wasn’t quite right, although I couldn’t describe a specific aspect of the sound that gave me this impression. The difference in sound was, however, less significant than with the other processors auditioned with the DTI v.2.0.

**Measurements**

Although we have a much better understanding of jitter’s effects than we had just a few years ago, we’re still a long way from completely comprehending the subject. For example, is the determining factor in sound quality the jitter’s spectrum or the overall RMS jitter level? How does jitter of specific frequencies (periodic jitter) affect the sound compared to random (white) jitter? And how much jitter is audible?

Only by a combination of listening and measuring can we hope to answer these questions and attempt to correlate the listening experience with technical performance.

With that goal in mind, I measured the DTI v.2.0’s effect on the word-clock jitter in two digital processors: the Adcom GDA-600 and Audio Alchemy’s DDE v.3.0. I measured the DDE v.3.0’s jitter without the DTI v.2.0, then with the DTI v.2.0 and coaxial connection, and finally with the DTI v.2.0 and the PS link.

The jitter test instrument was the Meintner LIM Detector fed by a 10x probe attached to the 8x word-clock pin on the respective DACs of each processor. An Audio Precision System One Dual Domain performed the RMS jitter readings (read as an RMS voltage, from which the time deviation is calculated), and also calculated the FFT-derived spectra on the jitter component of the word clock. The measurement bandwidth for the RMS measurements was 400Hz–20kHz.

Fig.1 is the GDA-600’s jitter spectrum when fed a 1kHz, ~90dB sinewave from the Sumo Axiom transport with no DTI v.2.0 in the signal path. The RMS jitter level was 230 picoseconds. With the DTI v.2.0, the RMS jitter level actually increased to 410ps, and the spectrum had more correlated jitter components and higher-amplitude periodic components (fig.2).

These measurements were surprising in light of the unmistakably better sound I heard from the Axiom/GDA-600 with the DTI v.2.0. Note, however, that this was the worst-case performance: there was no difference in RMS level or jitter spectrum with the DTI v.2.0 when the test signal was all zeros, and only a minor change (240ps vs 270ps) when the test signal was a 1kHz, full-scale sinewave. Although these very low signal levels are more revealing of jitter performance, music has a much higher signal level that may better correspond to the high-level jitter performance. Further, jitter over a bandwidth of DC–40kHz is sonically important, but the measurements taken here were only over a bandwidth of 400Hz–20kHz. There may be things going on outside our measurement window that we can’t see.

Conversely, the DDE v.3.0’s measured jitter performance was significantly better with the DTI v.2.0. Fig.3 is the DDE v.3’s jitter spectrum with a 1kHz, full-scale sinewave input from the PS Audio Lambda transport. The RMS jitter level was 240ps. With the DTI v.2.0 and coaxial connection to the DDE v.3, the RMS jitter level dropped to 200ps, and the jitter spectrum became cleaner (fig.4). Note how the strong signal–correlated periodic jitter components at 1kHz, 4kHz, 6kHz, 10kHz, 16kHz, and 25kHz were all significantly reduced.

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*Stereophile, September 1995*
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The same improvements were rendered by the DTI v2.0 with a 1kHz, -90dBFS sinewave input. Fig.6 is the DDE v3.0’s jitter spectrum with this test signal. The RMS jitter level was 365ps. With the DTI v2.0, the jitter level dropped to 190ps, and the spectrum became cleaner (fig.7). With the PS bus, the jitter dropped even further, to just 95ps. The DDE v3.0’s jitter spectrum under these conditions is shown in fig.8. Note the total suppression of the 1kHz component and the fewer periodic jitter components with the PS connection.

I can’t explain the v2.0’s measured performance with the GDA-600, but the correlation between listening and measurement is very strong in the case of the DTI v2.0 and the DDE v3.0.

CONCLUSION

The Audio Alchemy DTI v2.0 is a significantly better product than its predecessor, the original DTI. The v2.0 improved the sound of nearly every transport/processor combination I tried with it, but the degree of improvement varied greatly between products. In the case of the modestly priced Sumo Axiom transport and Adcom GDA-600 processor pair, the DTI v2.0 did improve the sound, but not as much as replacing the Axiom with the Theta Data Basic transport. In other words, the DTI v2.0 is no substitute for a high-quality transport.

The DTI v2.0 really came alive when used with Audio Alchemy’s DDE v3.0 processor. Even with the coaxial connection, the DTI v2.0 rendered a significant increase in soundstage depth, layering, bloom, and air. The bass tightened, and timbres became more liquid and natural. But when connected via the PS connection, the difference was dramatic, lifting the DDE v3.0 several notches higher in performance. In fact, the DDE v3.0/DTI v2.0 package ($1573 as configured) provided a level of musical performance that rivaled much more expensive digital front-ends.

If you own an Audio Alchemy processor with PS bus input, the DTI v2.0 should be a significant upgrade to your system, and well worth the $599 price. Owners of other processors should audition the DTI v2.0 in their systems before committing to a purchase. Although I thought the DTI v2.0 improved the sound of the various transport/processor combinations I tried, you may get better overall results by investing in a higher-quality transport first.

With those cautions, I can enthusiastically recommend the DTI v2.0—the latest product to reduce jitter’s effect on digitally reproduced music.
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Stu McCready, Positive Feedback, Vol.5 No.3

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I know some people will disagree with me, but I’m of the opinion that changing one cable for another in an attempt to balance out the sound in an audio system is akin to shaking a dog by its tail. (It should be stated that no animals were mistreated during this review!) I have always recommended to friends and readers alike that you build your system as a synergistic whole. It’s been my experience that the music is best served when both the speaker cables and the interconnects (not the digital link, however; but I’ll get to that) are from the same maker.

I’ve recently participated in a “thread,” or online conversation, on The Audiophile Network1 with Doug Blackburn, George Cardas, and Walter D’Ascenzo regarding this very issue. Walter brought up an interesting point, which I include here as food for thought:

“Since you review equipment, you have to maintain a reference system so that you can assess the new variable. That is too bad. My reference is live music. It is ever the challenge to get my home music system to cough up a reasonable facsimile of the live experience. Mixing cables has helped to move me in that direction. Call it cabling tone controls, call it synergism, call it what you want. The fact remains that certain circumstances—such as source impedance, current drive capability, load impedance, etc.—require a cable with characteristics that prove compatible in that situation.”

Remember, although my experience runs contrary to Walter’s, I’m not telling you that single-brand is the only way to look at it—it’s just my (informed) opinion garnered through many cable changes over time. I tell you now, as I’ve always done: use your ears and decide for yourself what works best in your system. Only you can know that. But you can be guided by what my colleagues at Stereophile and I have observed during exposure to more wire changes than you can shake a stick at, if not that proverbial dog we seem to have once again by the tail!

With these basic cable issues in mind, then, we turn to an examination of the XLO Signature series of interconnect, digital data-link, and speaker cables. I first heard about and tried the XLO Reference cable back when I labored for The Absolute Sound. It was Michael Gindi who insisted I stop peppering him with questions and just get the freaking stuff! The Gindian assured me it would improve my system. Well, I did as he suggested, and he was right.

Since then, in spite of the noisy RF soup that is New York, I’ve moved up to an all-Signature lash-up that I’ve considered my reference for a long time. While it’s true that of late I’ve been trying other cables in the system, it’s XLO that I know best. For comparative purposes, and to give you an idea of my cable exposure, let me mention that other system-wide cables have included Siltech, AudioQuest, AudioTruth Diamond, and Discovery Signature—all to excellent effect—with Kimber AGDL and Synergistic Research, among others, on deck.

Why bother, you might ask? If I like XLO, why not just “schtick” with it? Well, I consider it my duty as a reviewer to get the best out of whatever piece of equipment is here under review. It isn’t a given that everything is just going to love, honor, and obey the XLO until death do them part. Au contraire, as Roger Skoff, XLO headman, put it during my interview with him (see elsewhere in this issue). A result, and in spite of the pure audiophile pain in the pancreas that changing the triwired speaker cables that feed my Avalon Ascents almost always is, I do my best to find the right fit when wiring various devices in question chez Scull.

**Type 3.1 Signature Phono Cable**

Starting with the analog front-end, let’s look first at the dedicated phono cable. I’ll forgo elaborate descriptions of how the cables are made—for the complete hoopy-scroopy, take a look at my interview with Roger Skoff. Suffice to say, the Type 3.1 Signature is decked out in standard XLO purple and gray livery (gray/silver always “hot”), with a bulky gray mesh cover hiding the shield within. The 3.1 sports alligator clips that drain the shield to the chassis ground rather than as most cable makers do, tying up with the negative conductor at the RCA jack.

If the theory that shielding to the chassis ground impairs the signal less than tying it to an RCA jack, it’s here, at the phono input, where that philosophy will be most rigorously tested. After all, that’s quite a small signal we’re playing with. Any perturbations or anomalies injected into this delicate signal should be immediately evident. I use a 1.5m phono cable, which some feel is a bit longer than ideal for a phono cable; but, given the location of the Forsell Air Force One turntable in relation to my CAT SL1 Signature preamp, it works for me.

In the event, the only perturbations I can detect are the ones in my head as I ask myself, “How does Roger do it?”

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Whether due to the special shielding arrangement (Teflon and air spacer betwixt shield and conductors) or the drain to chassis ground, the Signature Type 3.1 cable was ultra-silent. Backgrounds were blacker, and music seemed to reach me in a more vivid and dimensional manner than through other phono cables. The soundstage, when so recorded, also seemed quite enormous via the Type 3.1. (This was not an artifact—recordings made with a narrower soundstage perspective sounded that way.)

Along with this generously proportioned soundscape was a depth that belied the listening room’s dimensions. Depending on the cartridge and the front end, images could emanate from a little forward of the speakers to waaaaay omnigawd back. (The Symphonic Line Kraft 250 amplifiers are the champs at wafting the images to the rear of the listening room, although I’m not sure they like the XLO overmuch.)

As far as retrieval of information was concerned, the Type 3.1 is without peer. One always had the sense of recovering the maximum detail, however minute, that may be contained in the grooves. Be it the clack of the keys on an oboe, the breathy inhalations of a performer, the nooks and crannies of a vocal rendition, or the richness and splendor of an orchestral crescendo, the Type 3.1 brought it all right to my “listening devices” (as Vladimir One put it in my LAMM review last April, Vol.18 No.4). The 3.1 never fell apart—imaging and tonal balance remained constant under whatever sonic onslaught I saw fit to throw at it. While I consider this cable supremely neutral, its clean, quiet, quick, and wideband response could exacerbate bright or gritty recordings. But this is as it should be—we don’t want a thousand-dollar-a-meter-and-a-half phono cable to editorialize, do we? By the same token, neither could one accuse the cable of being “sweet”—in the manner of the AudioTruth Diamond, for example. Was this some sort of failure on its part? I suggest not.

As a parting point of reference, let me tell you that, no matter what the cable in the rest of the system, I often found myself returning to the Signature 3.1 as the final arbiter of analog taste for this most delicate of signals. In a word or two, this is great stuff!

**Type 4.1 Signature Digital Datalink**

Staying with the front end, let’s do the digital interconnect next. The $325 Type 4.1 Signature digital datalink also sports the purple and graysilver color scheme.

It is as unshielded as the line-level interconnect, but can be visually distinguished from it by the white RCA barrels at both ends. (All other XLO cables have “colorized” barrels.) It is, however, still marked for directionality, as are all XLO cables.

The 4.1 is a tricky cable to nail down. While it’s true that all cable interactions are dependent on the equipment they’re interfacing with, it’s my opinion that digital datalinks are even more dependent on these myriad factors. When I receive a transport and D/A for review, I swap the many digital datalinks I have on hand (in all three formats), looking for the right match(es). While it’s true that some digital cables sound pretty much the same from unit to unit (I’m thinking about the Kimber AGDL and Marigo Apparition Reference as perfect examples), the XLO is rather more chameleon-like. I’ve heard it sound smooth and warm, even creamy, between certain digital front-ends; but I’ve also heard it sound a bit hard, seemingly over-detailed, and narrower in soundstage perspective than others.

What can I tell you? I’m not equivocating. Impedance, type of receiver chip, signal level, the unshielded nature of the XLO product (an Original Cable Jacket helped more often than not)—any or all of these factors lead to jitter, and contribute to the sound of a digital datalink. You’ll just have to try the 4.1 in your front-end and see what happens.

At its best, well-mated and happy, the 4.1 can knock your socks off. Were it not for the outstanding synergy of the Kimber AGDL and the Illuminati DataFlex Studio between the Forsell Mk.II Air Bearing CD Transport and DAC, I could live quite happily with the XLO. In fact, it sounded a little smoother than the occasionally ruff’n’ready Kimber, but somewhat less open in the highs than the Illuminati.

So while the 4.1 might not be just right for the Forsell, I found it can give great results in other systems. For example, it worked a special magic with the C.E.C. TL 2 now on hand; and it worked wonders on the Timbre TT-1 DAC/C.E.C. TL 1 combo, which I reviewed in May ’94 (Vol.17 No.5). I quote: “When switching to coax, only XLO Type 4 digital was anywhere near acceptable, firming up the focus and sounding somewhat more ambient than the softer-focusing Mapleshade, TARA Labs Digital Master, or Pure Logic, although each had its charm. The XLO was also a little ‘hotter’ on top, but its incisive and immediate presentation helped to lift the C.E.C. out of its permanent romantic swoon.’”

When I used Type 4.1 with the Esoteric P-25 transport, “… images seemed to be more forward and noticeably wider than those with the balanced connection. There was also that as–expected XLO sense of immediacy and those lightning–quick leading–edge transients—hallmarks of Roger Skoff’s cables. The XLO Signature is an exciting cable…”

While I wound up preferring the Kimber AGDL as the reference digital datalink for the Jads JS1/J1 Drive, which I reviewed last March (Vol.18 No.3), the 4.1 wasn’t far behind.

**Type 1.1 Signature Line-Level Interconnect**

Really, describing this $625/m interconnect is a piece of cake: neutral, detailed, very fast, alive, exciting, with a really big soundstage, plenty of well-controlled deep bass, a humless midbass, a some–what leaner midrange than some cables, and airy, open highs. Next!

The Type 1.1 Signatures were our reference interconnects of choice for the LAMMs M1.1 monoblock amps: “Of course, as with any equipment in for review, we listened to the LAMMs straight up and without tweaks of any kind, other than confirming that we much preferred the XLO to the Siltech with these amps” (Vol.18 No.4). The XLO allowed the LAMMs to bloom and develop an “enormous, extremely airy, and transparent soundstage…” This immense yet perfectly natural-sounding acoustic was precisely and proportionally...
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rendered, mirroring the volume of the recorded space. The very rear of the completely open soundstage was as wide, airy, open, clean, and perfectly focused as the front. The performer’s images were beautifully and precisely rendered within its layered and articulate soundstage. The amps had an uncanny ability to decouple the performance from the speakers, and create that “palpable presence” the reviewing community is always prattling on about. (And to which I am myself totally addicted.)”

I’m not saying the entire sound of the LAMM M1.1s was dependent on the XLO, but this wire sure made it possible for the LAMMs to strut their stuff. For further details of this synergistic match, let me refer you directly to the review.

Regarding the Forsell The Statement, which I reviewed in June ’95 (Vol.18 No.6), we used “the mighty XLO Signature throughout…” I think the XLO was a major factor in allowing this expensive and refined Swedish amplifier to make the magic it did. Here, the incisive, detailed, transparent all-XLO setup balanced well with the nuanced, gentle, yet magnificent and dynamic Forsell amp. Aside from recalling to you that this combo billowed out the most enormous soundstage we’d ever heard, I’ll refer you for particulars to the article itself, where you can divine the synergy that made it all happen.

And, of course, XLO Signature 1.1 has been our cable of choice for our reference amps, the Jadis JA 200s, which we hold so dear. Somewhat, their soundstaging abilities and their ability to pass tonal colors, clarity, and speed (I keep coming back to that, don’t I?) allow the Jadises to open up and bloom the music throughout our loft.

You might, if you were so inclined, find a small fault or two with the interconnect. For example, some find it a touch too thin—and I could almost see that if you were using lean-sounding solid-state gear. On the caliber of equipment we audition here, the harmonic envelope was complete; and tonal colors seemed unaffected. Others might point a finger at the lack of top-end sweetness (although the 1.1s are very extended). I didn’t find this to be a problem with either tubes (with which the XLO mate supremely well, in general) or with any solid-state we’ve had on hand.

It’s been suggested that these characteristics, including an occasional foray into a perceived “hardness,” may have something to do with their unshielded nature; this may be so. Remember, shielded versions, carefully made so as to compromise as little as possible the integrity of the signal they’re capable of passing, are available from XLO. But I submit to you that, given their supreme neutrality—a blessing for a reviewer—whatever hardness may be glimpsed from time to time probably exists upstream somewhere.

And no one ever complained about the bass, which was always first-class in every aspect. Or their soundstaging abilities, which were always breathtaking. In these aspects, the Type 1.1 Signature—and, indeed, the entire XLO lineup—can be very addicting!

Type 5.1 Signature Speaker Cable
This silver-and-purple stuff costs $120/running foot plus $150 termination pair and is big, heavy, unwieldy, and a positive bear to triwire. It seems to have a mind of its own and [SPRING IT] went where it wanted to go, not where I wanted it to go! This in spite of using one regular pair per side for the bass in conjunction with a bi-wire pair for the midrange driver and tweeter. (That’s four spade lugs at the speaker, joined together at the amp end to just two spade lugs, for ease of use.)

I’ve always found the Type 5.1 Signature speaker cable to be the jewel in the XLO crown. As I mentioned, some may mildly disparage the line-level interconnect (deservedly or not), but one could never level any real criticism at the speaker cable. (Except for their ungainly physical nature!) They are neutrality itself. The 5.1 cable passed along the signal in such an untouched-by-human-hands manner that I truly can find nothing to complain about.

The 5.1 worked supremely well with the Jadis JA 200s, Forsell’s The Statement, the LAMM M1.1s—that is to say, across a wide-range of equipment of differing topologies and philosophies. In every case, it got out of the way and let the music through. Break-in is a consideration, however. If you go for it and spend the (considerable) monies required, give these speaker cables time to burn-in. There’s no bass to begin, then too much, and, finally, after some number of hours—40, perhaps?—the sound settles down and you can begin to enjoy your investment. Similarly during this initial period, the midrange will seem somewhat congested and the highs grainy and forward. Trust me, just hang on, and don’t do anything foolish—it’s worth it. Interestingly, if you swap out for another cable then return to the 5.1, after this initial burn-in is accomplished the time to reach close-to-optimum sound is much shorter—an hour or two at most. This is a quality I appreciate!

The 5.1s were 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. Midbass detail was unfettered by colorations and frequency anomalies. The midrange suffered not from the ever-so-slightly-lean nature of the interconnects. (Remember, I do not consider this a problem at all. A matter of taste? Perhaps.)

The upper midrange and treble ranges were similarly well-served, and were completely grainless and free of brightness or other artifacts. Where the interconnect could never have been accused of being sweet, the speaker cable could, if provoked, bring a wistful smile and a sense of lovely sweetness to the presentation that was sure to please.

Believe me, griping about equipment is my life. Regarding XLO’s 5.1 Signature speaker cable, only silence and an appreciative smile marked their installation in our system. For these and the rest of the XLO Signature cable lineup, I can only offer an enthusiastic thumbs up, accompanied by a hearty “highly recommended!”
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Krell KSA-50S & Conrad-Johnson Premier Eleven A Power Amplifiers

In my review of the $3300 Krell KSA-50S stereo power amplifier last month (Vol.18 No.8, p.165), an obvious point of sonic comparison would have been the $3495 Conrad-Johnson Premier Eleven A that Wes Phillips wrote about in the same issue (p.195). Time constraints, however, prevented that from being possible, hence the appearance of this Follow-Up.

For details of the system used, see my review of the AR 303 loudspeaker. The main loudspeaker used in the comparison was the B&W Silver Signature, although I also used the AR 303. The single-ended C-J was 5.7dB less sensitive (at 1kHz) than the balanced Krell, during the listening sessions, I adjusted this with the Mark Levinson No.385's accurate 0.1dB-step volume control. Both amplifiers were driven all the time; whichever wasn't hooked up to the loudspeakers was loaded by 8 ohm power resistors.

My first impression was how similar these amplifiers sounded. High-performance amplifiers must perforce be examples of convergent evolution, different technologies leading to the same excellent sound. When it came to the details, however, the comparison of the two amplifiers typified the tube-vs-solid-state debate. Both amplifiers had grain-free trebles, though the tube amplifier's sound was more shelved-down with the AR speaker. However, the Connie-J's soundstaging was more believable; the Krell's bass was more authoritative.

In the second section of "Don't Give Up," from Peter Gabriel's 1994 Secret World Live album (Geffen GEF2-24722), for example, bassist Tony Levin plays a powerful reggae riff on his custom three-string Music Man instrument, heavily damping the lower strings (he used a Pamper to do this on the original studio recording). While the Premier Eleven had very similar extension on this sound, the bass guitar had considerably more slam with the solid-state amp.

On the other hand, while Paula Cole's reassuring second vocal line on the same track sounded a little more sibilant with the tubed amp, it was simply more palpably real.

Ever since I saw them live in concert in the early '80s, I've loved the Manhattan Transfer. The sound of their eponymous first album (Atlantic 7567-81493-2), however, is definitely low-rent. That's what you hear over the Krell—a flat soundstage, with an upper-midrange-dominant vocal sound and a bass guitar that's missing its fundamentals. Yet via the C-J, the vocal scat lines and Zoot Sims's tenor sax on "You Can Depend on Me" were better fleshed out in the lower mids, with the result that I could more easily ignore the recording's technical deficiencies. In general, I'm not a big believer in audiophile recordings. A good system should make the music accessible on even mediocre recordings, and this is where the Premier Eleven edged ahead of the KSA-50S.

I performed a full set of measurements on the C-J Premier Eleven A, but I'll show just a couple here. In the measurements accompanying WP's review of the original Eleven amplifier in the October '94 Stereophile (Vol.17 No.10, p.143), Tom Norton found a suspicious-looking distortion spurious trace (fig.1) that implied the amplifier suffered from crossover distortion. It appeared that the culprit was the circuit that drove the biasing LEDs; the A revision of the amplifier was said to have been fixed in this regard. Fig.2, taken under much the same conditions as fig.1, shows that, indeed, it has been. The distortion is now primarily second-harmonic rather than the original's third-harmonic; both are generally regarded as innocuous unless present in much higher quantities than in the C-J.

Second, it has been postulated that all audible differences between well-designed amplifiers are due to the differences in frequency responses caused by the voltage-divider action between the loudspeaker impedance and the amplifier's source impedance. The latter measured between 0.48 and 0.56 ohms for the C-J, varying only slightly with frequency; and 0.28 ohms for the Krell, giving rise to response variations when loaded by the B&W Silver Signature (fig.3). The top trace is the Krell; the bottom, offset by 1dB for clarity, is the Connie-J. It varies by about twice as much as the Krell, reaching ±0.25dB. The tube amp's more depressed top two octaves were audible as a very slight lack of air; yet it was the C-J's lower mids that sounded warmer—the opposite of what these curves would suggest.

Neither of these amps will be all things for all listeners. If you just have to have the most forceful presentation of rock music's low-frequency foundation, then the Krell will be the better choice. The Conrad-Johnson, on the other hand, will be the better amplifier for soundstage freaks and those in love with the sound of the human voice. You pay your money, you make your choice. Be sure to listen to both.

—John Atkinson $
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MIT Reference Interfaces

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H I G H E N D O N L Y  B O S T O N  A R E A
Becaus he did not complete a symphony until he was 43, and left but four in all, Brahms is not considered a prolific orchestral composer. Yet for slightly less than a decade (1876–85) he was prolific enough, producing the four works that have led to his being tagged the greatest symphonist since Beethoven.

Possibly owing to their chronological closeness, Brahms's four symphonies have not been placed in the niches of "periods" as have, say, the Beethoven "Nines." Indeed, a one-time cliché response to the issue about which of the Brahms symphonies is the "greatest" was "the last heard." Each, of course, is a major masterpiece, yet one can trace in them (as in the "three periods" spanned by the Beethoven Nine) a clearly marked growth that peaks with the Symphony No.4 in E-Minor.

More than anything else, Symphony 4 typifies the increasingly economical command of material that, with the passage of time, came to stamp Brahms's music. Consider, for example, the very opening: hardly classifiable as melody, this motivic passage that falls and rises in two-note phrases becomes the germ of an entire movement in which those phrases undergo changes in character as marked as any that occur in the theater. In short, this is a prime example of Brahms as the exemplar of the Classical tradition of Haydn, Mozart, and Beethoven.

 Tradition, in fact, stamps virtually the entire work. It should not be forgotten that Brahms was a first-class musicologist who edited, among other things, early German music and the works of Schubert. His knowledge of Renaissance and Baroque styles is reflected in 4, its second movement being in the Phrygian mode, its finale a grand passacaglia in which a melody of eight notes and eight bars generates the harmonic backbone of the entire movement and becomes the basis for a series of variations in which that melody recurs in various guises and disguises. Here is something unique in the symphonic literature—a capstone to a work that, having echoed the style of the Classicists, proceeds to look even further rearward to Bach. In short, 4 is as fine an example as exists in Western music of how the greatest innovators achieve originality—not by ignoring tradition, but by mastering it.

Partly because of its traditional elements, the work poses special interpretive problems. Its finale requires a steady pulse so that the unity rooted in its reiterated theme is not compromised. This is not so simple a matter as it may seem. The meter sometimes changes from one
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variation to another, and Brahms specifies a few modifications of tempo in the movement, the most radical being a *più allegro* for the coda. Here tasteful and style-sensitive conductors recognize that whatever acceleration occurs at this point must be modulated to maintain the movement's intensity and ensure the cumulative impact that should be conveyed at its close.

And other problems of pace exist. Because the opening movement is often characterized (aptly if a bit subjectively) as having "autumnal longing," it seems to invite a slow tempo, an invitation further suggested by Brahms's cautionary *Allegro non troppo* specification. But this specification must be seen in the context of the movement's *alla breve* character. In other words, it must be played fast enough to preclude what sometimes occurs in interior performances: any suggestion of a-four-to-the-bar threnody. And if the transformation of the movement's opening theme that occurs in its coda is to be effective, that coda must be rendered in tempo.

Then there is the issue of the work's texture and color. The time has fortunately passed when Brahms's orchestrations were condemned for being "too thick." Quite the contrary: with accomplished direction, they are models of biting, sometimes craggy clarity and expressivity, helping to define the music's character. Anyone who doubts this should listen to 4 in its original four-hand version, recorded by the Duo Crommelynck (Claves 50-9012), to discover the extent to which the personality of the music is defined by its *orchestral* nature.

And for those who remain skeptical about the inspiration of Brahms's orchestrations, there is the beginning of the second movement. For its first 28 measures, winds and horns repeat a central theme accompanied by strings played exclusively pizzicato. This coloration becomes almost hypnotic in its growing monotony. At measure 29, the spell is suddenly broken by the entrance of bowed strings whose freshness of tone is like a sudden burst of timbral light, but a burst that seems all the more potent as a result of its initial hushed gentleness. These first minutes of the second movement make special demands of a conductor—not only in terms of securing appropriate balances among the winds and horns, but also in requiring a projection of the ethereal delicacy in those first bowed notes.

Given the spate of historical reissues that has appeared in the last few years, it is not surprising that several podium giants of the first half of this century are represented on CD in this score. The oldest recording among them dates from 1930 and features Max Fiedler (no relation to Arthur) with the Berlin Philharmonic (Biddulph 003-4, a two-CD set including Fiedler's Brahms 2). Born in 1859, the conductor knew Brahms and ostensibly was admired by him. His performance is of a kind rarely encountered today: rhythmically free with a wide parameter of tempos within a movement, but whose gear shifts seem to evolve naturally from the music itself. Unfortunately, the transfer draws on rather noisy 78s, their rough surfaces sometimes upstaging what is, even for its time, mediocre sound.

**Weingartner's Is a Poised, Powerful Conception, Tautly Organized and Mannerism-Free.**

It is interesting to compare Fiedler's approach to Weingartner's, recorded with the London Symphony in 1938 and available in two editions: a single Century CD (2128) and a sonically superior EMI transfer in a two-disc set devoted to the conductor's traversal of the four symphonies (EMI 64256). Weingartner's approach is the antithesis of Fiedler's: rhythmically strict, lean in sonority, and, save for a slightly broader-than-usual third movement, flatter than most. It is a poised, powerful conception, tautly organized and mannerism-free.

What is fascinating is that Weingartner, born in 1863, also knew Brahms and gained his admiration. This raises some cogent questions: Were the seemingly disparate styles of Weingartner and Fiedler less divergent when Brahms experienced them? Was Brahms inconsistent in taste? Or was he, like any composer, simply anxious to have his music performed and, as a result, all too ready to praise those willing to program it? Whatever, the moral to be drawn from these possibilities is simple: don't necessarily trust a composer's judgment when he lauds the performer who tackles his music.

Also represented by 78rpm productions are Stokowski and Walter, each having recorded the work three times. The first of Stokowski's, made in 1933 with the Philadelphia Orchestra, completed the phonograph's first Brahms cycle—all of which has been reissued in a two-CD Biddulph set (017-18). Small-scaled and sometimes so sweet-toned it should carry a warning for diabetics, this 4 also suffers from rhythmic distortions that cause the music's intricate structure to crumble. Stokowski's second recording, made in 1940 with the All-American Youth Orchestra (Music & Arts 845), is sonically far superior and impressive for the way in which he manages to make young musicians sound like veteran Philadelphians. Musically, however, the performance echoes the flaws of its predecessor. So, too, the conductor's later stereo version—which, I believe, RCA plans to reissue.

The first and third of Walter's three recordings are currently on CD. The former, produced in 1934 with the BBC Symphony, is available in a superb transfer (Koch 7120). It is the fleetest of the two and, as the (for its time) fine recording suggests, the leanest in sonority. But it is blemished by a number of mannerisms that compromise line and integrity. In his most recent version (a 1959 stereo account, at this writing due for remastering in Sony's *Bruno Walter Edition*), the mannerisms have been modified, the tempos broadened. The major virtues of the performance are its lovely lyrical flow animated by a strong rhythmic pull not always present in Walter's work. If missing some of the music's intensity, the performance still conveys an essential aspect of its character. The sound is more than serviceable, conveying the lightweight tone of the West Coast ad-hoc orchestra.

With the advent of LP, several conductors whose careers were rooted in the first half of this century had a go at 4. Toscanini considered it Brahms's finest symphony, and his 1951 NBC studio recording—currently reissued in a slightly brighter but otherwise excellent mid-priced CD transfer (RCA 60260)—preserves the lean, transparent, rhythmically taut conception that defined his approach to the work. But that conception was not unvarying, as three other Toscanini accounts (all in-concert versions) suggest: a 1935 BBC Symphony performance (EMI 69783), slightly broader in tempo and more flexible rhythmically; a 1951 NBC broadcast, similar to the studio effort but a bit more supple (Hunt 706, a two-CD set featuring all the Brahms symphonies in Toscanini-led NBC broadcasts); and a 1952 Philharmonia Orchestra version (Hunt 524, a three-CD set preserving the conductor's 1952 London Brahms cycle), also similar to the studio account but having a weightier sonority and slightly greater elasticity. Unfortunately, the finale is scarred by the stentorian explosion of a firecracker that is as intrusive
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Aside for those with special interests, then, the RCA edition, at least for sonic reasons, should have the greatest staying power. With its architectural integrity, textural transparency, and dramatic wallop, it remains one of the phonograph's great statements of the score.

Utterly different, but in its own way often compelling, is Furtwängler's approach. Although he left no studio recording of the work, concert accounts have been released. The two I have heard are with the Berlin Philharmonic and date from 1943 (Music & Arts 804, a four-disc set containing all the Brahms symphonies led by the conductor) and 1948 (Virtuoso 269–9072, a three-disc bargain-basement set of the four symphonies in other Furtwängler performances, and selling for about $7). Both accounts are freewheeling, with marked tempo fluctuations usually occurring at identical points, and thus suggesting that Furtwängler's ostensibly "improvisational" style was carefully planned. But the later performance (once available from EMI) is better controlled and boasts better sound that is free of the hum afflicting the 1943 reading. Not for audiophiles, perhaps, these performances remain fascinating documents of an interpretive style that is simply not to be encountered today.

With stereo now four decades old, some of the earliest two-channel editions warrant "historical" designation. Most surprising among them is Klemperer's 1956 recording with the Philharmonia Orchestra (EMI 96469). Unlike the long-lined, tightly organized approach typical of Klemperer's other Brahms recordings, this one suffers from unsteady rhythm and rhetorical adjustments that fracture the grand design. One might assume that these eccentricities were spur-of-the-moment impulses, but an in-concert Klemperer reading (Orfeo 201 891) contains similar mannerisms to an even more obtrusive degree.

That this symphony can be given a strong performance that is rooted in flexible rhythm is attested by a splendid 1962 live performance by the Bavarian Radio Orchestra under Schuricht (Prelude 1124). All of this vastly undervalued conductor's tempo modifications seem natural, the performance animated by a richness of color and transparency of texture. Longtime collectors who recall Schuricht's magnificent studio recording of the Brahms Symphony 2 will find this account of 4 equally compelling.

Rhythmic sturdiness in excess can, of course, be a fault, as Szell's Cleveland Orchestra performance makes clear. His plodding tempos, unyielding pulse, and stiff phrasing impose an interpretive rigor mortis and emotional deadness on the music, a bass-deficient recording only making matters worse. Even at its modest price, this Essential Classics reissue (Sony 46330) is no bargain.

**Szell's Plodding Tempos, Unyielding Pulse, and Stiff Phrasing Impose an Interpretive Rigor Mortis on the Music.**

Similar in some respects is Reiner's Royal Philharmonic reading, available in an excellent CD transfer (Chessy CD6). Superficially, everything here seems right: the judicious pacing, lean sonority, steady rhythm. Yet everything also sounds too cool, too understated, and, as a result, too bland. One is reminded here of Stravinsky's view that music expresses "nothing." This said, it remains hard not to admire the control Reiner exerts.

The point at which the tag "historical" ceases to apply is not always readily defined. For those with no special interest in the conductor, Munch's Boston Symphony version (RCA 09026) may not deserve such classification. But (like his account of the Brahms Symphony 2), it reveals a special affinity for the composer. Slightly harsh and tinged with pre-Dolby hiss, the sound remains generally good, preserving a realistically distant concert-hall perspective. And Munch's unsentimental, beautifully balanced, transparent reading boasts structural clarity, a flexible, aptly "walking" *Andante* in the second movement, and the finest account of the third that I have ever heard—a bit broader than some, with explosive *forte* chords, and free of the fuzzy *Lupfen* favored by some conductors. Only an overly prominent triangle that sounds like an intrusion by Ma Bell spoils a performance that concludes with a potent, rhythmically steady finale. As a bargain CD, this reissue, despite its age, deserves preferred-edition status.

Among other older editions, five warrant mention. Munch's successor in Boston, Erich Leinsdorf, is featured in a 1966 concert performance with the Czech Philharmonic from which he draws some exceptionally expressive string playing (Multisonic 31–0020). Impressively, too, is the climactic power he generates in the finale. Mediocre mono sound, however, will limit the appeal of this release.

The mono sound of a 1956 Kempe account is better in a newly reissued set (Testament 3054) featuring the conductor in a Brahms cycle. Stamped with tasteful use of rubato and a care with balances, the performance typifies the gifts of another conductor whose reputation in the United States was never as great as it should have been. But, given the competition from modern editions, this reissue will be mainly for Brahmsians who collect complete cycles.

The same is probably true for a 1973 in-concert performance by the Leningrad Philharmonic included in a Ravninsky-led cycle (Memoria 991–066, 2 CDs). Aside from a few rhythmic manipulations and an awkward rush to the close in the finale, this is a strong reading characterized by unusually revealing voicing, animated tempos, and a prevailing temperament that never spills over into the temperamentally. Helping the whole is fairly good stereo sound.

Surviving only in mono is a 1974 in-concert performance led by Celibidache with the Stuttgart Radio Orchestra (Andromeda 2507). I have never understood why this conductor has developed such a devoted following. Often he seems arbitrary, mannered, and fussy, displaying little grasp of a work's grand design. Granted, there are many lovely details in his 4, the performance benefiting from carefully molded phrases and subtle dynamic gradations. But gear shifts in the second movement—especially at the point where bowed strings enter—are ludicrously extreme, and the grand structure of the finale collapses as a result of tempo fluctuations. And even by two-decade-old standards, the sound is only fair. A 1959 in-concert Celibidache account with the Milan Radio Orchestra offers better sound in my LP edition, but I have not heard the CD transfer (Memoria 991 012). Whatever, the performance is afflicted with identical aberrations.

Worth seeking is a 1971 Brahms cycle led by Sanderling with the Dresden State Orchestra (Eurodisc 69220, 3 CDs). Sonically it holds up quite well, and the performances, despite their relative breadth, have momentum and tension, 4 in particular shining in its sharply defined textures, firmness of line, and formal coherence—virtues that generate a propulsion not attainable merely from sheer speed. Note, by the way, that this set should not be confused with a 1991
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Sanderling cycle (Capriccio 10 600), where an inferior orchestra and more flaccid readings do not yield the drama of the earlier traversal. Among the many remaining modern accounts, it is surprising to find a great number that defy any endorsement. Totally out of the running are the static, tensionless readings of Redel, Haenchen, Rahbari, Järvi, and Previn. Five others, if not much better, warrant greater discussion, mainly because of the conductors involved. Abbado (DG 435 439) draws beautiful playing from the Berlin Philharmonic, but his overly precious view lacks drama and suffers from a rush to the finish in the great passacaglia. The Cleveland Orchestra under Ashkenazy (London 436 853) sounds steely in tone; and, despite some pointed clarification of inner voices, too many rhetorical emphases work against the music's flow and continuity.

Barenboim's performance with the Chicago Symphony is available only in a four-disc cycle (Erato 94817) in which everything, especially 4, sounds lazy, limp, and languid, the episodic treatment of the concluding passacaglia causing it to fall apart. Although drawing some gorgeous phrasing from the Bayreuth Radio Orchestra, Sir Colin Davis (RCA 60383) also disappoints with awkward gear shifts and an unsteady pulse in the finale. Often it seems as if the Davis who leads German ensembles is very different from the more vibrant one directing those in London, Amsterdam, and Boston. The gorgeous sound of the Vienna Philharmonic under Giulini (DG 429 403) in no way compensates for a reading blemished by awkward Luftpausen, rhythmic instability, and tempos slow to the point of mannerism. This is Brahms not so much performed as embalmed.

Superior if not deserving unqualified endorsements are the recordings of Chailly, Solti, Mehta, Jankowski, Skrowaczewski, and Haitink. Chailly and the Concertgebouw Orchestra (IMP 897) would be more competitive. The performance starts almost mincingly but improves as it progresses, the slower-than-usual tempos of the two initial movements enlivened by clarification of Brahms's colorful orchestration and intricate polyphony. Additional virtues include a vibrant third movement and a finale that, while flexible, is all of a piece. Haitink's two recordings—one from 1972 with the Concertgebouw Orchestra (Philips 442 068) and one newly released with the Boston Symphony (Philips 434 991)—are something of a puzzle. Neither has a major flaw, and both are distinguished by the magnificent playing of great orchestras. But in slightly different ways, each suffers from a prevailing neutrality. The entrance of bowed strings in the second movement, for example, is understated in both versions to a point that denies the passage its magic. A few differences between the two performances are worth noting. The newer one is marginally slower. The Boston Symphony is less brassy and slightly weightier than its Amsterdam counterpart and is reproduced with slightly smoother string tone. But the Concertgebouw ensemble has more clearly delineated choirs, thus providing greater clarity of texture.

All of the remaining editions sustain a higher level. For those attracted to the coolness of Haitink, Fischer-Dieskau and the Czech Philharmonic should be heard (Supraphon 0014). During the few years he pursued a career on the podium, the baritone proved remarkably gifted and tasteful—as is attested by this direct, understated, texturally clear reading. Unfortunately, the CD transfer of a 1977 taping lacks the bloom in string tone of the original LP. Still, the unmannered lyric flow of the whole commands attention.

Simply by virtue of Carlos Kleiber being one of the most sought-after of today's conductors, any recording he makes arouses interest. And with many features that lend it stature, his Vienna Philharmonic performance (DG 400 037) cannot be dismissed. The playing is disciplined and features clear textures, lean sonority, and scrupulously molded phrasings. At times, however, things sound over-controlled and unspectacular, Kleiber, like Szell, holding the reins too tightly and thereby suffocating the music rather than letting it breathe. The 1981 digital sound, if a bit metallic, is otherwise quite good—far better than that of an almost identical Kleiber-led performance recorded in concert in 1979 (Exclusive EX92728).

Although it may lack the discipline and polish of Kleiber's performance, Bernstein's 1962 New York Philharmonic version is in many ways more satisfying. Certainly the conductor's intellectual grasp of Brahms has been evinced in his cogent lectures, but this grasp has not always carried through in his performances. Here it does. The Philharmonic's tone is, to be sure, coarser than that of other world-class orchestras, and the ensemble is a bit loose at times. But everything is integrated, animated, yet unhurried, with the rich polyphony of the first movement well-defined and the finale, while flexible, never sounding episodic. Heard in the latest transfer (Sony 47438), the sound, if slightly thin, remains thoroughly listenable. Bernstein's 1981 recording with the Vienna Philharmonic (DG 410 084) is much superior sonically but, owing to its broader pacing, less satisfying musically.

If distant but well-balanced sound is a preference, Kubelik's 1983 Bavarian Radio Orchestra performance should be heard. The first movement, shaped by a few tasteful rhetorical touches, builds to a powerful climax, and the second is paced as an aptly "walking" andante that

**Stylish, Unsentimental, Beautifully Balanced, Transparent Reading Boasts Structural Clarity, and the Finest Account of the Third Movement That I Have Ever Heard.**

Were it not for a steely unpleasantness of (early digital) sound, Skrowaczewski and the Hallé Orchestra (IMP 897) would be more competitive. The performance starts almost mincingly but improves as it progresses, the slower-than-usual tempos of the two initial movements enlivened by clarification of Brahms's colorful orchestration and intricate polyphony. Additional virtues include a vibrant third movement and a finale that, while flexible, is all of a piece. Haitink's two recordings—one from 1972 with the Concertgebouw Orchestra (Philips 442 068) and one newly released with the Boston Symphony (Philips 434 991)—are something of a puzzle. Neither has a major flaw, and both are distinguished by the magnificent playing of great orchestras. But in slightly different ways, each suffers from a prevailing neutrality. The entrance of bowed strings in the second movement, for example, is understated in both versions to a point that denies the passage its magic. A few differences between the two performances are worth noting. The newer one is marginally slower. The Boston Symphony is less brassy and slightly weightier than its Amsterdam counterpart and is reproduced with slightly smoother string tone. But the Concertgebouw ensemble has more clearly delineated choirs, thus providing greater clarity of texture.

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retains its implicit tenderness. Crowning the whole is a stunning finale: potent, searingly bleak, and held together by an uncompromised firmness of pulse. As a striking blend of the lyric and dramatic, this account shines as a preferred edition. It is available only in a three-CD set containing a Kubelik-led cycle (Orfeo 070 833).

Also impressive is Dohnányi with the Cleveland Orchestra (Teldec 43673). Spoiled only by an acceleration at the close of the finale that enervates the movement's cumulative force, its broad pacing is enlivened throughout by virtuosic playing, well-focused textures, and a freedom from mannerisms. The engineer, closer in perspective than that accorded Kubelik, is warm and natural.

Completing this survey and among the most compelling of currently available editions are those of Karajan, Sawallisch, and Wand. Karajan left four studio versions, the last two of which remain widely available. They may not be for every taste and certainly are not for mine. The conductor's preference for sexual sonorities, refined phrasing, and long legato lines smooth away some of the music's intentionally rough edges. Yet this highly individual approach (unlike Stokowski's, for instance) does not neutralize drama or—owing to a steady pulse—inhibit flow. The first movement, in particular, emerges with a long-lined lyric lushness of extraordinary beauty. It may be an abstract beauty of a kind Brahms never intended, but it is no less gorgeous for that. Both Karajan's 1977 (DG 437 645) and 1988 (DG 427 497) recordings reveal the tonal opulence of the Berlin Philharmonic, the latter being, perhaps, a shade less idiosyncratic.

Utterly different are the far more idiomatic Sawallisch and Wand. Sawallisch is represented by two recordings: a 1963 effort with the Vienna Symphony (recently reissued in a bargain Philips Duo set, 438 757, containing Sawallisch's first of two Brahms cycles) and a 1990 account with the London Philharmonic (EMI 54060). Although similar in their commands of form, judicious pacing, and rhythmic security, the earlier one, surprisingly, features slightly more immediate sound. It also boasts a slightly better definition of textures and marginally faster tempos, with a finale benefiting from greater rhythmic control and brass having a greater cutting edge. Both, though, are first-rate.

Wand's recording (RCA 60088) is the one I would own were I owning but one. Taut, free of sentimentality in its well-judged, relatively fast pacing, balanced so as to reveal the music's many interwoven lines, and having one of the most tautly organized finales on disc, it blends drama and lyricism to suggest the score's Classical roots while conveying the individual way in which Brahms's imagination took shape from those roots. The North German Radio Orchestra may lack the tonal allure of the Berlin Philharmonic, but its coarser sonority is better suited to the music. Coupled with Wand's superb account of Brahms's Symphony 3, this mid-priced disc totaling 74 minutes is a virtual giveaway; in terms of today's dollar, it costs about one-tenth of what was needed to purchase these works at the close of the 78rpm era.

A little more than 60 years are spanned by the recordings discussed here. Splitting those years into two groups of equal length enables some revealing generalizations to be made between the performances in each, those from the earlier group containing far wider interpretive parameters than those from the later one. And this raises an interesting issue, making one wonder if the easy dissemination of music enabled by the long-playing record catalyzed a more homogenized approach to the standard repertory than existed in the early days of the phonograph. Possibly so, but even among only stereo versions there is probably a Brahms Fourth to suit every taste.

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Quarter Notes

Wes Phillips

By the time you read this I'll be living in Santa Fe, but right now I'm typing frantically—trying to meet an even-earlier-than-usual deadline imposed by the move. My reference books are all packed, as is my record collection, and boxes line my listening-room wall. Naturally, this changed my familiar acoustic; so, having emptied my record shelves to pack my discs, I had to stuff the packed boxes back into them to alleviate boomy bass and a general blurring of detail.

There's lots of stuff to cover this time, including a bunch of LPs—so much stuff, in fact, that I'm going to have to leave some of it for next time. Sorry about that, but there are enough goodies here to hold you. Honest.

Doctor Bull's good Night

John Bull
Pieces pour clavier

PIERRE HANTAI

Astrée

BULL: Doctor Bull's Goodnight
Pieces for Harpsichord by John Bull
Pierre Hantai, harpsichord
E 8543 (CD only). Nicolas Bartolomé, prod.; Anne Fontigny, Manuel Mohino, engs. DDD. TT: 74:19

John Bull was one of the great Elizabethan virginalists—as well as a rake and a scoundrel (“the man hath more music than honesty and is as famous for marring of virginity as he is for fingering of organs and virginals,” wrote the Archbishop of Canterbury).

His music is playful and melodic. Hantai performs it on an unusually mellow-sounding Italian-style harpsichord tuned to a low A=392, which results in a richly sonorous reading. Hantai's technique is impeccable, and he brings the requisite humor to these miniatures. His relaxed approach emphasizes the compositional similarities to the Renaissance lute style, where short themes were followed by long series of variations. The recording is clean and detailed, with the room exhibiting a rapid decay in keeping with the rooms of that era. The clarity of the recording and the sonority of the instrument make this a perfect harpsichord disc for those who normally find that instrument to display—in a friend's perfect description—"too much tinkle-tinkle."

Goyescas must be the most intensely Spanish composition in the literature—an homage to the artist whose paintings romanticized a Spain that was vanishing even as he painted—and the piece has received definitive interpretations from Ricardo Viñes (who had the work directly from Granados's hand) and from Alicia De Larrocha, who has pretty much owned the franchise for the last two decades.

It takes a lot of guts for any pianist, much less a non-Spaniard, to attempt a reading, but guts—and chops—are exactly what Benita Meshulam displays here. It's a well-informed, idiomatic, deceptively casual-sounding performance so redolent of the Iberian landscape that one can hear the birdsong wafting on the orange-blossom-scented breezes. Intensely lyrical, her conception of the piece is nonetheless marked by a lean rhythm drive that keeps it from floating off into the ether.

Bob Katz captures a little piano sound ideally suited to this program—the instrument is present and full but doesn't overpower the material itself. There's a sense of air, and the sparkling overtones ring in the open, not overly reverberant, acoustic. As an "encore," Meshulam offers "Andaluza," from the Danza Españolas, in a simple, wistful reading that proves how much strength can inhabit a gentle statement. More, please. Soon!

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usually my thing, but I'm willing to make an exception when the sound is as seductive as it is here. It doesn't hurt that these pieces really are classics: Rózsa's El Cid, Korngold's King's Row, Barry's Born Free, Steiner's Gone With The Wind Suite—you get the idea. Further, Kenneth Wilkinson is in classic form here; the massed strings are limpid—sweeter than summer corn—and the soundstage is vast. In this lyrical collection, the basses and cellos anchor those soaring arches with their heft and depth. Sweet, detailed, solid, this is a sonic blockbuster—what more could you ask for?

Well, if your answer is vinyl, you're in luck. I just heard the test pressing, and all of the CD's strengths are there—plus, to my ears, an even greater sense of liquidity through that glorious midrange.

**CLASSIC**

**BILLYE HOLIDAY: Songs for Distingúe Lovers**
Reissue of Verve MG VS 6021 (LP only). Nor- man Granz, prod.; no eng. listed. AAA. TT: not listed

**LITTLE FEAT: Ain't Had Enough Fun**
Reissue of Zoro Entertainment 72445-11097-1 (2 LP's only). Bill Payne, Bill Wray, prod.; Ed Cherney, eng. DDA. TT: 63:36

**MATTHEW SWEET: Girlfriend**

**MATTHEW SWEET: 100% Fun**

**MATTHEW SWEET: Altered Beast**
Reissue of Zoro Entertainment 72445-11050-1 (LP only). Richard Dashut, Matthew Sweet, prods.; Lloyd Puckett, eng. AAA? TT: 53:56

Welcome as it is, Songs for Distingúe Lovers isn't essential Holiday—but it does ring honest and true. Recorded with a wide soundstage, it almost—but not quite—clumps into right/middle/left, yet it boasts an instrumental rightness that's compelling. Holiday's voice is rendered with honest intimacy, but I must say that, by the time of this recording, it was a rav- aged instrument. She was always a sublime song-stylist, but her range was never great; here one can hear more than a hint of coarseness and the effort singing cost her. All of which merely adds to the wounded poignancy of her interpretations; you ache listening to her. My pressing has assorted ticks and pops.

As a longtime Little Feat fan, I have to admit that it was a thrill to hold a new Feats record in my hands again. Shades of Waiting for Columbus! But Ain't Had Enough Fun is no WFC—and not just because Lowell George is gone, although his unerring melodic sense and warped lyrics would have enlivened this disc considerably. Little Feat these days seem to have filed off all of the quirky little flourishes that turned their brand of rhythmic stomp into something special. Yet a few songs show a glimmer of the old spark (“Romance Without Finance,” in particular), and the sound is pretty good. The drums are crisply recorded, and the instruments all inhabit a generous sense of space. Some of the vocal performances, however, seem overly sibilant and prone to flattening out—much in the manner of overloading an electrostatic speaker. I'm not convinced the sound justifies the outlay for a double record of this material.

If Nick Lowe hadn't already staked a claim on the phrase "Pure pop for now people," you'd just have to use it to describe Matthew Sweet. Ahhh, what the hell, let's use it anyway. Sweet composes pop songs in the manner of the late-'60s Beatles, Faces, or Traffic—catchy love songs elevated to masterpieces by dint of playing and production. Girlfriend is the jewel of the hatch, with the hard-edged guitars of Richard Lloyd, Lloyd Cole, and Robert Quine propelling a set of superbly crafted pieces.

The sound is the natural (assuming you can use the term in this context) sound of a rock band exploiting the sonic landscape of a studio. However, the CD never seemed quite right to me; this is music that was meant to be on a record, and Classic has really fulfilled that promise. Warm and rich, it possesses a funky organic feel that belies its electric nature.

Neither 100% Fun nor Altered Beast are as focused as Girlfriend, but once you acquire the taste, you'll have to have both. Richard J. Rosen wants me to mention that you lose three songs on the LP version of Girlfriend, which is a shame—but it sounds soo much better.

**DCC COMPACT CLASSICS**

**TOO CUTE! (Various Artists)**
DZS 079 (CD only). Steve Hoffman, prod., eng. AAD. TT: 26:18

**THE BEST OF TRAGEDY (Various Artists)**
DZS 078 (CD only). Steve Hoffman, prod., eng. AAD. TT: 43:58

**MUSIC FOR A BACHELOR'S DEN IN HI-FI (Various Artists)**
DZS 079 (CD only). Steve Hoffman, prod., eng. AAD. TT: 44:18

**THE BEACH BOYS: Endless Summer**
GZS-1078 (gold CD only). Brian Wilbow, prod.; Chuck Britz, eng.; Steve Hoffman, remastering eng. AAD. TT: 51:09

**WES MONTGOMERY: So Much Guitar!**
Wes Montgomery, guitar; Hank Jones, piano; Ron Carter, bass; Lex Humphries, drums; Ray Barretto, congas

**LIGHTNIN' HOPKINS/SONNY TERRA-RV/BROWNIE MCGHEE: Blues Hoot**
GZS-1081 (gold CD only). David Hubert, prod.; Steve Hoffman, remastering eng. AAD. TT: 59:37

**SONNY ROLLINS: Saxophone Colossus**
Sonny Rollins, tenor sax; Tommy Flanagan, piano; Doug Watkins, bass; Max Roach, drums
GZS-1082 (gold CD only). Bob Weinstock, prod.; Rudy Van Gelder, eng.; Steve Hoffman, remastering eng. AAD. TT: 40:06

Too Cute!, The Best of Tragedy, and Music for a Bachelor's Den in Hi-Fi are all concept collections. Too Cute! is constructed around one-hit wonders of the novelty single, at 1954–63: "Itsy Bitsy Teenie Weenie Yellow Polka Dot Bikini," "Chantilly Lace," "Short Shorts," "Witch Doctor," and the immortal "Kookie Kookie (Lend Me Your Comb?)." The Best of Tragedy collects teen tear-jerkers from the same period—like "Teen Angel," "Ode to Billy Joe," "Patches," and "Leader of the Pack." Music for a Bachelor... mines '50s "exotica" like "Theme from Route 66," "Quiet Village," "Theme from The Honeycomb," and Dick Hyman's (!) "Moritat"—stuff that swing- ing bachelors were supposed to use as mood music.

All three are lots of fun, and Hoffman generally obtains warm, realistic sound; yet the age of many of these songs virtually dictates that they will feature that wide early-stereo sound that left a hole in the center of the soundstage. A lot of care lavished on very slight—albeit engaging—premises.

Endless Summer's release in 1974 sparked the (now seemingly endless) Beach Boys revival—but don't hold that against this reissue, which adds spectacular sound to
an engaging collection of their hits. Even early on in the Boys' career, Brian Wilson was coxing phenomenal sound out of the studio—sweet, warm, and detailed. Did I say detailed? Every time I listen to this compilation, little flourishes surface: the handclaps on “Catch A Wave” never fail to make me jump; the toy piano rising out of the mix on “The Warmth of the Sun” sounds just like—well, a toy piano in my living room; and the purity of the vocal harmonies always beckons me to try to add another voice to the blend. Only half the tracks are stereo, but all of them sound pure and true. This means that we’re talking about the ungimmicked sound of cheesy ’60s keyboards and guitars at times, but given today’s level of technology, that just makes it seem refreshing—the rock equivalent of an original-instrument performance. Highly recommended.

So Much Guitar! is an intensely swinging 1961 hard-bop date—none of that pop-fusion schlock Montgomery got saddled with a few years later. Montgomery caught a boatload of crap for his unconventional technique—mostly from less talented musicians who resented the fact that he didn't let a lack of formal training keep him from saying amazing things on his instrument. Here, his technique of picking octaves with his thumb contributes directly to the warm tone: one so unlike a guitar that you'd swear his lines were being doubled by a horn player. This set includes a rare solo piece and a handful of slow-burning scorchers. The sound is warm and tonally true—unfortunately, it’s concentrated in the speakers. It does have swing, chops, and a lot of assured virtuosity; you'll have to decide for yourself if all that counterbalances its one shortcoming, *Blues Hoot* is a live recording of a 1961 performance at the Ash Grove in Hollywood. Relaxed, natural sound distinguishes this enjoyable performance. I had a late pressing of the Horizon LP, and it was pressed on sandpaper—or maybe, I reasoned at the time, the only microphone position was over the deep-fat fryer. Now that I've heard a quiet copy of this performance, I realize that all three bluesmen were on that night. And when Sonny lets off one of his "dooooaaas," you realize that the dynamics on this (mostly quiet) performance are outstanding. I jump every time.

**Classic's LP Reissues—The Saga Continues**

PROKOFIEV: *Lt. Kije*
STRAINSKY: *Song of the Nightingale*

Fritz Reiner, *Chicago Symphony*

Reissue of RCA LSC 2150 (LP only).
Richard Mohr, prod.; Lewis Layton, eng. AAA.

Tchaikovsky: *Capriccio Italiano*
Rimsky-Korsakov: *Capriccio Espagnol*

Kiri Kondrashin, RCA Victor Symphony
Reissue of RCA LSC 2323 (LP only).
Richard Mohr, prod.; Lewis Layton, eng. AAA.

Fritz Reiner: *The Reiner Sound*

Fritz Reiner, *Chicago Symphony*

Reissue of RCA LSC 2183 (LP only).
Richard Mohr, prod.; Lewis Layton, eng. AAA.

*Overture! Overture!*

Raymond Agoult, New Symphony Orchestra of London
Reissue of RCA LSC 2134 (LP only). Ray Minshull, prod.; Cyril Windebank, eng. AAA.

*Rhapsodies*

Leopold Stokowski, RCA Victor Symphony

Reissue of RCA LSC 2471 (LP only). Peter Dellheim, prod.; Robert Simpson, eng. AAA.

Like the Energizer rabbit, Classic Records just keeps going and going and going. I hope this series continues until every single RCA Living Stereo title has been Classified. As has been the case from the beginning, the new records are superb. Here’s how a few recent titles stack up to original Shaded Dogs, Chesky, and CD reissues.

Reiner's *Lt. Kije*, even on a late 24/19S pressing, is a combination of delicacy, detail, and power. Significant for its open and transparent sonics, it also offers plenty of lower-register strength, warmth, and impact. While both sides of this record are great both sonically and musically, *The Nightingale* is spectacularly dynamic and sounds uncommonly natural.

The Chesky reissue LP offers a deep soundstage that echoes across the back of the listening room with wonderful realism (listen to the snare drum at the beginning of side one). It's a more clear-eyed, less romantic sonic rendering than the original, but is by no means sterile.

But the Classic LP sounds best of all, offering more vivid detail, sharper, punchier brass, better imaging, and more bloom. The muted violins at the beginning of *The Nightingale* sound as if they have real mutes on them, not just muted sonics—a small but telling detail.

One of the most celebrated Shaded Dogs, *The Reiner Sound* is one of the great recordings in classical music. My 16S/20S pressing has strings that seem to ooze out of the speakers. Ravel’s *Pavane for a Dead *70s*, in particular, embodies the delicacy/power balance of the great RCAs. And soundstage depth and breadth don't get much better than this. Bass is not tremendous, however, especially when compared to some of the other Dogs; but orchestral balance and texture are superb. This record has the power to enchant and mesmerize. Reiner’s incisive, sure-handed mastery of the CSO is also unparalleled.

The Chesky is cut hotter than the original, but the soundstage is more...
DISCOVERY

DEXTER GORDON: American Classic

Dexter Gordon, tenor sax; Grover Washington, soprano sax; Shirley Scott, organ; Kirk Lightsey, piano; David Eubanks, bass; Eddie Gladden, drums.

JAZZ AT THE MOVIES BAND: Body Heat

Jazz at the Movies, prod.; Bob M. Hillis, eng. AAA? TT: 44:38

JAZZ AT THE MOVIES BAND: A Man and a Woman; Sex at the Movies


JAZZ AT THE MOVIES BAND: White Heat Film Noir

79003-1 (LP only). Blue Note, prod.; Robert M. Hillis, eng. AAA? TT: 51:46

OREGON: Out of the Woods

Paul Mccandless, oboe, English horn, bass clarinet; Glen Moore, double bass, violin, piano, flute; Ralph Towner, guitar, piano. French horn, flugelhorn; Colin Walcott, tabla, sitar, clarinet, percussion.

79994-1 (LP only). Oregon, prod.; David Greene, eng. AAA? TT: 42:37

LEE RITENOUR: "Ri"

Lee Ritenour, guitars, guitar synthesizers, violin, vocals; Harvey Mason, drums, percussion; David Foster, Greg Phillinganes, Richard Tee, Greg Mathews, Don Grusin, keyboards; Michael Boddicker, synthesizers; Abrahm Laboriel, David Hormate, John Pierce, Louis Johnson, bass; Jeff Porcaro, Rick Schlosser, drums; Paulino Da Costa, Steve Forman, percussion; Bill Champlin, Eric Tegg, vocals.

Jazz at the Movies, prod.; Bob M. Hillis, eng. AAA? TT: 56:52

Discovery is a division of WEA dedicated to audiophile vinyl. Jac Holzman—founder of Elektra and Nonesuch, long-time audiophile, and (cool title) Chief Technologist of the Warner Music Group—likes the way records sound and has championed this new project. The Mastering Lab cuts the lacquers with tube gear, and all of the metal parts, Discovery claims, are scrupulously monitored. Stoppers are discarded before they show signs of wear. Highest-quality lacquers, original cover art—they're going to a lot of effort to produce a quality product.

In terms of the records themselves, they succeed. The pressings are clean, exhibit excellent sound and wide dynamics, and are quiet as can be. I just wish the music had been chosen with more care. Two of the initial releases are really swell. Dexter Gordon's American Classic finds the master of the bebop tenor in fine form and accompanied by an acerbic Grover Washington (I), a lyrical Kirk Lightsey, and a hard-driving Shirley Scott. The soundstage doesn't have much depth—actually, there's next to none—but the instrumental textures are vividly true to life, as are the dynamics. Scott's organ really stands out—it grows and purrs to the point where you feel as if you should pet it.
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Out of the Woods also reflects well on the series. I hear a richly detailed soundstage that places each of the players in a specific space with an openness and wide dynamic range that are spectacular. The music blends widely diverse genres: contemporary classical, worldwide ethnic forms—especially Indian—and free-form improvisation of an intensely lyrical bent. Oregon's music is hard to categorize, but then that's the point. Rather than confine themselves to just one musical neighborhood, they'd rather wander around, choosing from all possibilities. When it's done as well as on Out of the Woods, so would I.

As for the three Jazz at the Movies Band discs... I don't get it. The sound is clean and clear but totally undistinguished, tending toward a homogenous studio flatness. The arrangements are so-so (Mike Garson's on Body Heat are the best of the lot), and the "bands"—conglomerations of L.A. session players—don't bring anything to the music other than an ability to read the charts.

If I were going to release an audiophile edition of a Lee Ritenour record, it sure wouldn't be "Rit!" But then, WEA doesn't own the rights to Rio or Festival, where Ritenour plays acoustic surrounded by superlative Brazilian players. What we get in this release is a batch of offensive-ly graceless studio drivel that lacks even the virtue of being easy to ignore. The recording is clean, but it's a generic '80s studio sound: flat, lacking space, with no imaging whatsoever.

I hope that Discovery's next release exploits the Elektra and Nonesuch catalogs to better avail; both labels typically paid a lot of attention to sound quality as well as musical merit. [How about Holzman's producing debut, Zodiac Cosmic Sounds?] A Cannier selection would give us records that better justified the effort.

Mozarabic, meaning "non-Arab," was used in Moorish Spain to describe the Spanish Christians. They had their own Latinate bible—the Verus Hispania—their own rituals, and their own musical liturgy: the chants represented here. The form is ancient—the Gregorian tradition sounds downright modern compared to it, and one can hear Arabic inflections and possibly even echoes of more ancient modes in it.

Here we are given an office of lectures and a eucharistic prayer service, which are rendered in a chillingly realistic reverberant acoustic. The liner notes don't list the recording venue, but it has to be a stone chapel of vast proportions. When Peres chants the solo lines, they linger in the air, adrift beneath stone vaults—then the ensemble responds and the space is filled with warmth, with voices, with the word.

Tom Miller of The Audio Adventure likens our stereo to time machines that can take us to the past and time of the original performance, and this disc certainly does that—rarely have I heard voices more perfectly rendered or a space more realistically evoked. But the performance itself is the true time machine, allowing me to travel through the centuries to a time and place where people no different from me also responded to the majesty and the mystery of these transcendent works.

**Mapleshade/Wildchild!**

**Frank Kimbergho Trio: Lonely Woman**

Frank Kimbergho, piano; Ben Wolfe, bass; Jeff Williams, drums.

Mapleshade 56282 (CD only). Pierre Sprey, prod.; eng. AAD. TT: 61:00

**Sweetman with his Southside Groove Kings: Austin Backalley Blue**

Sweetman, tenor sax; Bill Warfield, trumpet; Jack Morgan, Mark Korpi, Buddy Turner, guitar; Jeff Sari, John Coontz, bass; Mike Buck, drums.

Wildchild 02752 (CD only). Sweetman, prod.; Pierre Sprey, prod.; eng. AAD. TT: 48:31

**Norris Turney Quartet: Big, Sweet 'n Blue**

Norris Turney, alto sax; Larry Willis, piano; Walter Booker, bass; Jimmy Cobb, drums.

Mapleshade 02652 (CD only). Larry Willis, prod.; Pierre Sprey, prod.; eng. AAD. TT: 71:19

Kimbrough, Wolfe, and Williams are more than just talented jazz musicians—they're a trio. More akin to a classical piano trio—where no one lead voice predominates—than a conventional piano/bass/drums jazz unit, these three musicians achieve a rare level of pure communication in their playing. I've seldom heard a more unified ensemble approach in jazz. And they compose, too! Aside from three fairly diverse covers (Ornette Coleman, Herbie Nichols, Jimmy Rowles), they wrote everything on the disc.

The sound Sprey coaxes from them is the perfect complement to their melodic musicianship: the piano, an 80-year-old Steinway O, is rich and liquid; the bass is deeply detailed—when Wolfe plays alto, you can hear the rosin leaping off the horsehair; and the drums are crisp, relaxed, articulate. They're playing in a room, not a big one, but a real space with natural proportions and just a smidgen of decay—all perfectly portrayed. An enormously appealing recording.

Sweetman's Southside Groove Kings are "proudly filthy sounding"—this is the kind of band you'd hear in a stanky backalley dive, and the sound of this disc brings all of that heady atmosphere into your listening room. This is the band that I've searched for in a hundred bars and never found. (Yes, that was research, darlin'.) Sweetman has a nasty tenor sound, normally playing in that roughed-up King Curtis style, but he can play as sweet as Coleman Hawkins when he has a mind to, as on the title song. The soundstage is totally believable, setting the group in a somewhat cramped acoustic that seems appropriate. The dynamic shadings are impressive, and even when the band flattens out, the sound remains articulate and focused. We're talking the aural equivalent of barbecue here: saturated with smoke, sweet and tangy—just being in the same room with it will get you greasy. And if you ever need to start a party, all you have to do is put Austin Backalley Blue on the box—it could corrupt a bishop.

Big Sweet 'n Blue describes Norris Turney's also sound perfectly. It's huge but sweetly expressive—after all, he's the guy who replaced Johnny Hodges in the Ellington band! Hard to believe this is his first record as a leader, but it was worth the wait. Joined by veterans Jimmy Cobb (a member of Cannonball Adderly and Miles Davis's bands, and the only surviving player from Kind of Blue), Walter Booker (Adderly, Monk), and Larry Willis (Adderly, Jackie McLean, Stan Getz, Carmen McRae...), he turns in a masterful, full of richly nuanced swinger. I can't believe that Sprey has managed to capture sax sound this big and powerful, while making it sound absolutely real.
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Turney’s tone is breath made flesh: round, warm, solid, and—yes!—sweet. Willis’s piano serves as the sax’s perfect foil: softer and more liquid, but just as present. The rhythm section is a force of nature; one can hear the wind and running water in Cobb’s brush work, and Booker’s bass is as deep and solid as bedrock. Don’t miss this one.

**Mobile Fidelity Sound Labs**

**JOE COCKER: Sheffield Steel**  
MFSL 1-223 (LP), UDCC 631 (gold CD). Chris Blackwell, Alex Sadkin, prods.; Alex Sadkin, Benji Aronbister, engs. AAA/AAD. TT: 38:27

**ALBERT COLLINS: Gold Snap**  
MFSL 1-226 (LP only). Bruce Iglauer, Dick Shurman, prods.; Justin Niebank, eng. AAA. TT: 43:00

**HANK CRAWFORD/MARTY PAICH ORCHESTRA: Soul of the Ballad**  
MFSL 1-224 (LP only). Marty Paich, prods.; Bill Putnam, eng. AAA. TT: 35:50

**BOB MARLEY & THE WAILERS: Exodus**  
MFSL 1-221 (LP), UDCC 628 (gold CD), Bob Marley & The Wailers, prods.; Karl Pitterson, eng. AAA/AAD. TT: 37:25

**JOHN COUGAR MELLencamp: The Lonesome Jubilee**  
MFSL 1-222 (LP), John Mellencamp, Don Gehman, prods.; David Leonard, Don Gehman, engs. AAA. TT: 39:46

**TRAFFIC: Traffic**  
UDCC 629 (gold CD only). Jimmy Miller, prods.; Glyn Johns, Eddie Kramer, Brian Hughes, Terry Brown, engs. AAD. TT: 40:35

**U2: The Unforgettable Fire**  
UDCC 624 (gold CD only). Brian Eno, Daniel Lanois, prods., engs. AAD. TT: 43:17

**VANGELIS: Chariots of Fire**  

**RICK WAKEMAN: Journey to the Center of the Earth**  
UDCC 663 (gold CD only). Rick Wakeman, prods.; Phil Tognutta, Pete Flammang, engs. AAD. TT: 46:02

Now I get it! I kept seeing *Sheffield Steel* among the audiophile recordings in my friends’ record collections, and it never occurred to me that it wasn’t a mistake. If only I’d had a little faith, I could have heard this great record earlier. This is the Joe Cocker release to own; it has great songs, evinces none of his over-the-top vocal mannerisms, and is assembled with holographic, extraordinarily unforced sound. Believable soundstaging is augmented by rich instrumental voicings—even Wally Badarou’s synth sounds are warm and full of breath. Cocker sings the songs with intelligence—restraint, even—and the band responds by settling into a relaxed, driving groove that just doesn’t quit.

The LP has all of that and more. There’s more air, and Sly Dunbar’s drums are so crisply present that you’ll be tempted to offer him *hors d’oeuvres*. On Randy Newman’s “Marie,” I swear that I could hear Cocker’s vocal chords shredding. But in a good way.

*Gold Snap* refers to Albert Collins’ signature sound: a biting, percussive, astrigent tone that only he could coax from the Telecaster—a sound he described as “ice picking.” This session, which features the Uptown Horns, is a real burner. There are fantastic solos, including some protracted ones, but it is Collins’ abilities as a relaxed blues vocalist and storyteller that are the standouts here. And it’s one of the best-sounding blues records I’ve ever heard, to boot. The bass is deep and solid, the drums brilliant and clear, and the horns have that biting honk that distinguishes the real thing. Thank you, MoFi.

Hank Crawford—a penetrating and rhythmically informed alto saxophonist—stepped out of Ray Charles’ band to record *Soul of the Ballad* with Ray’s longtime collaborator, arranger Marty Paich. Those familiar with Ray’s classic recordings will know what to expect—the orchestrations seem almost syrupy until offset by the bite of Crawford’s solo voice. This date perfectly captures that sweet/sour balancing act on a disc just begging for a cold night, a warm fire, and a hot companion. Hard-left/hard-right early stereo sound is the fly in the ointment, though. Pass if you can’t listen beyond that.

*Exodus* isn’t the Wailers disc I’d have started a reissue program with—I’ve had gone with *Bustin’ or Natty Dread* (or better yet, the even stronger Trojan release of *African Herbsman*)—but you gotta start somewhere. *Exodus* does boast phenomenal sound that rides Aston “Familyman” Barrett’s bass lines deep (deep) into a relentless groove. Bass is reggae’s glamour instrument—the guitar mostly goes *chukka chukka*—and Barrett is the Clapton of reggae bass lines, with an ability to achieve a solidity and palpability to his *riddim* only rivaled by Robbie Shakespeare. This groove is as alive and present as you or I—and one hell of a lot more monumental! The sound is characterized by gobs of detail and tonal sweetness, with an expansive if shallow soundstage on CD. The vinyl has a lot more depth, but the stunner is how much more I seem to get Marley’s political and emotional messages in that format.

*The Lonesome Jubilee* is impressive at blending John Mellencamp’s anthetic arena-rock chops with a more intimate acoustic instrumentation. The drumming still tends toward that ponderous big-beat swagger, and Mellencamp still seems to declaim rather than sing; but he’s moving in the right direction, and songs such as “Rooty Toot Toot,” “Cherry Bomb,” and “Hard Times for an Honest Man” really work for me. The disc sounds articulate and uncluttered, and, while the soundstage may not be totally believable, it was assembled in the studio with great cleverness. There’s rich, deep bass and crisp drum and cymbal work—overall, I’d say the sound is honest, if not necessarily true.

*Traffic* has always had my vote as the band’s strongest release. There’s a sense of balance here: Chris Woods’ gentle tonal colors counter Capaldi’s muscular rhythms, and Winwood’s cerebral keyboard and guitar really needed Dave Mason’s melodicism. It didn’t hurt that Glyn Johns was involved—in fact, it practically guarantees natural, uncluttered sound. Better here, I think, than on my UA LP—but not as good as the (was it?) pink-label Island pressing I heard at a friend’s. (It’s awfully hard to tell at this remove, and we were participating in activities not known for improving one’s grasp of reality.)

Anyway, this CD just might be a revelation. Despite a few phasey, reverber-y effects, it has a beguiling tonal purity. Bass sounds fat and round, and Capaldi’s drums just *snap* into focus. Chris Woods’ unique tone—as distinctive on sax as it is on flute—is robustly rendered. *Traffic* sounds so innocent these days—but that doesn’t have to mean simple. You can’t ask for a better-sounding rock record—or a better set of tunes.

*The Unforgettable Fire* isn’t exactly a model of tonal purity, but, in a strange way, it was the first time that U2 sounded like themselves. Eno and Lanois blurred the clean distinctions between the instruments, and, while the sound was murky and congealed, somehow it worked. MoFi has cleaned up just enough that you can now hear deeper into the mix. Think of it as defrosting your windshield on a foggy night. It’s clear right in front of you, but there’s stuff happening deeper in that you’d like to know about. Maybe that’s not pure, but whoever said rock had to be pure? Not me, that’s for sure. A big improvement.

*Chariots of Fire* was enormously popular—as a soundtrack as well as a film—so I suspect that MoFi is correct in surmising that there is a market out there for a really well-remastered gold CD of this music. You just couldn’t prove it by me. While I’m willing to admit that Vangelis’ mix of acoustic and electronic instruments and his penchant for composing sweet little
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melodic patterns make his music more appealing than most synth-driven stuff, I find that ultimately he can never resist the really ponderous grand theme—which, since he doesn't go in for development much, means he will repeat it and repeat it and repeat it. Even if he does throw in different little tinkles each time, it just...drives...me...crazy! So the fact that this sounds much improved over the last time I heard it doesn't go far toward making me want to hear it again.

Michael Fremer accused MoFi of mining a rut, but Journey to the Center of the Earth is more than even he anticipated. Listening to this newly remastered version has convinced me that Sarre was wrong—hell isn't other people, it's listening to old art-rock records. This one, for instance: a collaboration among a synth wiz, the LSO (who'll play with anybody), a chorus, and a dead writer—what a concept! The narrative is so pared-down that the story line may even be too well (we should be so lucky), and to say that the lyrics are inane drivels is to abdicate all critical responsibility—they're mind-numbingly bad. The rock group, orchestra, and chorus don't even begin to cohere. I could go on, but why? And that's the real question: But why?

**NEW ALBION**

**OLIVEROS/DEMPSTER/PANAIOTIS: Deep Listening**

Pauline Oliveros, accordion, couch-shell, voice; Stuart Dempster, trombone, didgeridoo, garden hose, voice; Panaiotis, metal pieces, whistling, voice
NA 022 CD (CD only); Stuart Dempster, prod.; Al Swanson, eng. DDD. TT: 63:51

Technically speaking, this isn't a new recording—Robert Hessen reviewed it in the April 1992 Stereophile, p.275—but New Albion's new distribution deal with Harmonia Mundi means that these discs will now be widely available—not to mention that this is one of the most remarkable-sounding recordings I've ever heard.

Recorded in an empty, two-million-gallon water cistern, Deep Listening exhibits a unique sonic character: a 45-second reverberation that exerts no phase amplification, slap echo, or discernible early reflections. What is audible is a gradually growing continuation of the tones that approaches the amplitude of the original. The sound is warm and somehow nourishing, not to mention disorienting in a pleasant way. Since I lack any other frame of reference for it, I find myself comparing it to electronic music—but it has a human quality and a rich, warm harmonic structure that put any electronic music I've ever heard to shame.

Because of the practical considerations of recording in a 2,000,000-gallon cistern, this is both a purist and a minimalist recording—minimal miking and DC power supplies are the only way to record at this site. I love the places this music takes me to and the sound that these three artists achieve, so I thought I'd share the disc with you.

**NEW WORLD/ COUNTERCURRENTS**

**JEROME HARRIS: Hidden in Plain View: The Legacy of Eric Dolphy**

Jerome Harris, acoustic bass guitar; Bill Ware, vibraphone; E.J. Allen, trumpet; Don Byron, clarinet; Marty Ehrlich, alto sax, bass clarinet; Ray Anderson, trombone; Bobby Previte, drums (CD only). Arthur Moorhead, Mark Helias, prods.; James Farber, eng. AAD. TT: 58:29

Full disclosure time here: I wrote the liner notes to this one and really struggled over the morality of covering it in “Quarter Notes.” But why should you not hear about this disc just because New World was perceptive enough to commission me? Hidden in Plain View is a delightful record, brimming over with great tunes, clever musical puns (and a couple of fart jokes from trombonist Ray Anderson), and timbrally rich sound.

Eric Dolphy was one of the most compelling woodwind players of the late '50s and early '60s. He played with Mingus, Coltrane, Coleman and John Lewis, and also recorded a series of albums as a leader that some (myself among them) consider enduring classics. This band—and what a band—re-creates (sort of) the sextet that Dolphy favored in his final years, and they play his compositions with panache and verve. The recording is clean and uncluttered, even when the music becomes rhythmically complex. The players are prominent in the mix, which loses a certain amount of the room acoustic; but there is a natural room sound—you can hear it around Previte's drumming, Ware's vibraphone, and surrounding the brass. The deep wooden texture of Byron's clarinet and the brittle clarity of Ehrlich's alto are also rendered truthfully.

The real revelation here is Harris's acoustic bass guitar, which has a unique—and very much living—tonality. Its warmth and punch serve as the heartbeat of this joyous celebration of a great man's legacy.

**PGM**

**THE BUXTEHUDE PROJECT, Vol.I: Sacred Cantatas**

"Wacht auf, ruft uns die Stimme!" Box WV 101; "Singet dem Herrn," Box WV 98; "Quemadmodum desiderat cervus," Box WV 92; "O fröhliche Stunden, o herrliche Zeit," Box WV 85; " Jubilate Domino omnium terrar," Box WV 64; "Lobe den Herrn, meine Seele," Box WV 71; "Erfreue dich, Erdel," Box WV 26

Sarum Consort, Martha N. Johnson, dir.; Chamber Choir of St. Peter's in the Great Valley PGM 102 (CD only). Gabe N. Weiner, prod., eng. DDD. TT: 62:58

PGM (Pro Gloria Musica) is a new purist label that seems intent on balancing musicologically informed performances with state-of-the-art sound.

Based on these two discs, they're off to a promising start. Both feature delightful sound—warm and articulate, with a laudable balance between direct and reverberant signals. They're clear, without going so far into clean that they lack personality. Gavin Black's recital disc benefits from a richly sonorous instrument: a vibrant Keith Hill harpsichord made in 1978. Black's engaging performance makes the most of these works; but, pleasant as they are, there's a reason why Bach is constantly performed and these composers languish in semi-obscurity: he wrote better tunes.

The Buxtehude, happily, does not mine the mother lode of his organ works but focuses rather on his cantatas—works I hadn't heard before. Very different from Bach's cantatas, they lack his memorable melodies yet are amiable and totally subservient to the text—qualities that, as a writer, I find endearing. The Sarum Consort's five vocalists and 13 instrumentalists perform with an almost conversationally intimate—an excellent way to approach these works. The performance benefits from the gentle reverber and articulate warmth of the acoustic. I eagerly await Vol.II.

**RED HOUSE**

**KOERNER, RAY & GLOVER: Blues, Rags & Hollers**


In 1963, this was taped as a specialist audiophile recording by E.D. Nunn for
Audiophile Records. Tony Glover's hilarious liner notes describing the sessions reveal that audio wienies haven't changed much in the last 40 years.

Not exactly a best-seller, this disc sold—maybe—most of its 300-disc initial release before Elektra became interested in KR&G and bought the rights. According to legend, they were appalled by the radical dynamic swings and the wide soundstage and attempted to "fix" both problems by releasing a shorter Blue, Rag & Holler in mono. I've had a mono copy for years and have always wondered what the original sounded like.

Red House must have been wondering, too, and at last the stereo version has been made available. You know what? Elektra was right. The dynamic range is great (as it was in mono); but while Nunn may have been an audiophile, he wasn't a purist—he clearly miked instruments and vocals with separate mikes, then mixed them for maximum lateral spread. When Spider John Koerner plays guitar while singing, his voice comes out of the center, and his guitar is way over in the left speaker. Bummer!

Buy this one because it has dynamics that jump out at you like salmon in spawning season, or because Red House restored the four songs cut from the Elektra disc, or because it's a fun record (which it is). Just don't buy into that Great Lost Audiophile Classic routine.

In addition, DePaul's Jazz Ensemble I is capable of rocking out with supple muscularity. "Jumpin' at the Woodside" comes off as a double-time stomper with glistening precision in the ensemble playing. The dynamics and the utterly natural acoustic are a treat, and the session swings like a bandit.

If you want vinyl, it's available—the two-disc pressing gives you everything on the CD and more: more air, more presence, and more swing. I never could resist more.

TELARC

WAYNE JACKSON & ANDREW LOVE: The Memphis Horns CD-83344 (CD only). John Snyder, prod.; Michael Bishop, Jay Nowland, engs. DDD. TT: 51:33

Quick! Pop (heh-heh) quiz: Who has personalized the very essence of Memphis soul for more than 30 years? The contextually aware already know the answer: the Memphis Horns, of course. Studio mainstays at Stax/Volt, Bell, and, later, Muscle Shoals, the Memphis Horns have played with everyone over the last three decades: the Staples Singers, Otis (they were saved from the crash that claimed Otis's life by having to record the horn charts for "Dock of the Bay" that night), Carla Thomas, Isaac Hayes (yes, that was them on "Shaft").

Here they call in some favors and get paid back with a rocking, funky session that mixes inspired performances of classics with originals from their eminent guests. The recording is solid—up-front and direct, with great dynamic impact.

Telarc has a reputation for recording a lot of "hall" into the mix—at least in their classical offerings. However, this disc doesn't feature much room—the perspective is rather close. That minor cavil aside, I get a real kick from The Memphis Horns. After all, there's no such thing as too much Memphis soul.

Where do I start? A purist (straight to optical disc) recording of a concert (no retakes) of one of the most consistently inventive pianists working today—stop the presses, this is a major event!

Crisp, well-balanced, and quiet, this disc captures the dynamic of a trio listening to one another and then taking off on improvisational byways as inspiration strikes. The impact of hammer striking string—and of stick on drum or cymbal—is shocking. Right now! Right here, this recording seems to be saying, and that excitement and immediacy are exactly what most recordings lack out of the event.

I get so lost in the music that when the songs end and the audience is spread out in front of me applauding, they seem to be giving me an ovation—just for appreciating it.

WARNER BROTHERS

BELA FLECK: Tales from the Acoustic Planet

Bela Fleck, banjo; Tony Rice, guitar; Jerry Douglas, resonophonic guitar; Sam Bush, Matt Mundy, mandolin; Edgar Meyer, Victor Wooten, bass; Future Man, percussion; Bruce Hornsby, Chick Corea, piano; Branford Marsalis, tenor sax; Paul McCandless, bass clarinet, soprano sax; others.

45854-2 (CD only). Bela Fleck, prod.; Bill Vornick, Bernie Kirsch, Dave Sinko, engs. DDD? TT: 59:21

An album filled with collaborations and mutual inspirations that are wildly diverse yet hang together in a weird sort of way, Tales from the Acoustic Planet is packed with marvelous performances—these guys do have a lot to say to one another. Recorded close-in to the instruments—at three different studios, which explains why it lacks a sense of place—it nevertheless maintains a sort of woody propriety tonally. Deep bass manifests brilliant overtones, and the midrange is liquid and relaxed.

Fans of holographic soundstaging won't find it here. What you hear is more akin to a line strung from speaker to speaker (a line stage?) than a sense of actual space with musicians placed within it.

REFERENCE RECORDINGS


A big band at full throttle is so loud it's sary—if you haven't heard one, then you have no way to judge how close this disc gets. Wow! The sheer physicality of the sound on here is well-nigh unto unbelievable. Of course, it doesn't mean a thing if it ain't got that swing—and with Clark Terry and Frank Wess on board, how could it not?

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RICHARD LEHNERT ON RYKODISC’S DEFINITIVE EDITION
OF THE RECORDINGS OF FRANK ZAPPA

Only in the few years immediately preceding and following his death did Frank Zappa even begin to receive general acknowledgement for his uniquely provocative and prolific life’s work, and for how much the moral integrity of his acerbic voice had elevated the level of public discourse—whether in his many recordings, in his many interviews, or, a frequent victim of censorship himself, as an articulate arch-foe of censorship in Tipper Gore’s notorious PMRC hearings and elsewhere. Zappa’s unyielding intent to do and say exactly as he saw fit, without artistic, political, or moral compromise (he would have seen no differences among the three), simultaneously constituted a lifelong critique of the dark side of the American way of life, and a vindication of it at its best: Where else but in the United States could Zappa have for so long fought the moral and musical “authorities” and become a millionaire in the process?

Zappa eventually secured his autonomous position in the marketplace of musical and political ideas by steering clear of entanglements with quick-to-censor record companies altogether. Unlike the vast majority of recording musicians, by the mid-’70s he had regained the rights to all of his master recordings (except for the 200 Motels soundtrack, still tied up at MCA/United Artists). From then on, any contract with a record company would be one of distribution only.

Nor could he be called the idol of a fierce but tiny cult following whose recordings lacked sufficient “commercial potential” to be marketable. When Rykodisc first released some of his albums on CD ten years ago, they were astonished to discover that orders exceeded the volume of their initial pressings by a factor of four to one. Far from supporting an interesting but minority taste from whom they had little hope of recouping costs, Ryko’s bean counters soon discovered that sales of Zappa titles were actually supporting them.

So by the time he died in December 1993, Zappa (and then the Zappa Family Trust) was the owner and entrepreneur of a veritable one-man industry—Rykodisc—Swill—that included not only his 53 albums (on 70 CDs) dating from 1965 to the present but also videos, music publishing, limited LP editions, T-shirts, and paraphernalia of all kinds. The mastermind of this business side of things had long been Gail Zappa, Frank’s wife, whose financial acumen had been considered astute enough to earn her a profile in Fortune magazine. Zappa told her not long before his death, “I want you out of this business. I want you to relax and have a good time.” The Zappas began to look for a corporate buyer. Rhino Records seemed a sure bet for a while, but they backed out at the last minute. Rykodisc, the first label to release Zappa’s recordings on CD, then stepped in to take up where Rhino had left off.

It’s seldom that a record-company press release or flack sheet rises to the heights of noble sentiment, but Rykodisc President Don Rose came mighty close when he announced his company’s purchase last fall of the immense Zappa catalog:

“We believe that Frank Zappa will be regarded as the preeminent composer of the late 20th century. His recorded works are testament to that, as well as to his intel-

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In Your Life—the two Zappa albums with the worst and least distinctive original-covers.

Types and incorrect track timings have been corrected throughout. (Though Ryko missed a trick by not incorporating the corrections to Vol.1 of You Can't Do That On Stage Anymore that were printed in Vol.2.) Except for Uncle Meat, Joe's Garage, and Thing-Fish, whose bulky booklets precluded such treatment, all two-CD sets are now shipped in slimline double-jewelcases. Completers who buy the entire set will experience a net gain in shelf space of 6\%.

(Apostrophe) includes printed lyrics for the first time. Lumpy Gravy, originally released as two untitled 15-track mixes corresponding to the original LP sides, is now fully indexed. Joe's Garage now includes a separate "portfolio" in which are reprinted all of John Williams's obsessive-ly detailed images from the original gatefold LPs. And though you now have to buy three CDs instead of two (as on Ryko's original 1986 reissue) to get all of Shut Up 'n Play Yet Guitar, the new deluxe box beautifully replicates the original mail-order-only LPs. This is the single serious disadvantage of Ryko's reissue series: The four albums originally reissued in pairs on well-packed "twelver" CDs—We're Only In It for the Money and Lumpy Gravy, Over-the-Sex and Apostrophe—have been divorced again and are now available only as separate, full-priced releases. Ah, well—Phase Two of another greedy record-company ploy.

But all that's just window-dressing. What all Zappa fanatics—and by now we know that there are a lot of you out there—really want to know is, Do they sound any different? Are there any extra tracks?

The short answer is yes...and no. Yes, some of these discs sound very different from their previous versions. Yes, one of them has never before been released in the US. Yes, there is an extra track. But unless you're a compulsive completist who derives as much satisfaction from gazing at the orderly march of catalog numbers across three feet of CD shelves as you do from listening to the music, do you need to buy all these albums again? No.

The long answer takes up the rest of this article.

Hot poop

There have been a good many rumors flying around since last October, when Ryko first announced their purchase of the FZ masters: rumors of deathbed re-masterings for this new definitive edition of albums—many of which, in their first CD incarnations in the mid-'80s, exemplified digital at its worst. Ryko has been understandably reluctant to squelch such rumors (and the tasty possibility of the pulpy FZ hardcore buying most of these titles for the third time), but the truth of the cryptic "FZ approved master, 1993" announcement sported by all but a few of these discs (see starred items in sidebar) is as follows:

On most of these discs, Zappa wanted to correct little areas of distortion, digital dropouts, and random clicks—in general, to tweak'n'tweeze them up to snuff. Most of this cleanup work was done under his supervision during the last year or so of his life. Fanatics will uncover these minutiae on repeated listenings in the months and years to come, but really—most of these minor differences are of interest only to readers of Society Pages and other FZ fanazines. A few titles had been mastered or remastered so recently that they were considered to have taken full advantage of the latest technology and have been reissued as-were. More important is the fact that fully a third of these sets have been cut at levels slightly higher (see asterisked items in sidebar) or much higher (double asterisks) than previous editions.

Then there are those few titles that have been completely remixed and remastered...

Lumpy Gravy: Slightly increased level, better dynamics, tighter editing, soundstage not so flat.

We're Only In It for the Money: When FZ had originally attempted to remaster Money for its first CD issue, the bass and drum master tracks had deteriorated so badly as to be unusable. FZ replaced the mid-'60s rhythm section of Roy Estrada and Jimmy Carl Black with the mid-'80s, post-Jaco Pastorius stylings of Arthur Barrow and Chad Wackerman. He liked the result so much that he also replaced the perfectly usable rhythm tracks of Cruising with Ruben and the Jets. This tampering with an old master—even by The Old Master himself—was greeted by the faithful with imperfect zeal, not least because the new tracks sounded simply wrong, and ate up too much ambience to boot.

The Money master Ryko bought from the Zappa Family Trust is a recently rediscovered two-track analog master mix-down with usable bass and drum sound. Ryko has decided on the safe route of
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restoring the album to its precise debut status as originally released by MGM/Verve in 1967. This is a mixed blessing. It’s great to finally have a CD in which the sounds of Estrada’s precise fingering and Black’s earnestly foursquare beat are not only sonically and historically “right,” however unvirtuosic, but—especially in Estrada’s case—are also now fully audible for the first time.

But the verses of “Harry, You’re a Beast” and “Mother People” originally censored by MGM/Verve and included only recorded backward—and which had been unscrambled on Ryko’s original 1986 CD—are censored here once again. I dunno—historical accuracy is one thing, but preserving a censorship misguided in the first place is quite another. It would have been a simple matter for Ryko to reverse those snippets of tape. Also missing: five seconds of whispered bad-mouthing of the Velvet Underground by Gary Kellgren, and the recorder descant in “Mom & Dad”—both added by FZ for the ’86 reissue. Hold on to that first CD version.

Recording level is much higher, and there’s more depth and bottom, less hash and harshness, than on any other previous version. The simultaneous dialogs in the right and left channels at the end of “Flower Punk” come through more clearly than ever (they were unlistenable on the first CD), and the edits throughout have been reinstated in their original form. This is the only title Ryko has also issued on LP—it sounds exactly like the CD, minus some dynamic range. A deluxe boxed edition of Money, still in the works as I write, will include copies of the album on CD and LP, plus “other materials”—FZ goodies, paraphernalia, and artifacts of conceptual continuity yet to be disclosed.

London Symphony Orchestra, Vols.1 & 2: This two-CD set includes every track released on all three previous editions (two separate LPs, one CD), and has been completely remixed and remastered for this release. The improvement is considerable. The recording level is higher, orchestral timbres are much more natural, and the orchestral sound itself is much more believably cohesive. Spot-miking of featured soloists is not so relentlessly as before, nor is the string sound nearly as chalky. The ambience, though no less synthetic than before, is now far more convincing—fake reverb has been cut drastically. (To hear the difference, compare the French horn chorale in the third flat and harsh as to be almost unlistenable.

Humor has been completely remixed and remastered for its long-delayed US debut, and boy, does it sound better. Cut at a much higher level, the mix now has depth, breadth, bottom, and highs that will never paint at 40 paces. Bass and drums sound like real rock axes now—the difference in the more out-there instrumental sections of “Penguin in Bondage” is night-and-day.

This high-spirited set—the band is having so much fun it sounds positively euphoric—also contains one of the best-ever extended ensemble improvisations by an FZ band: the 16:43 “Let’s Move to Cleveland.” The difference on this new edition is that the extremely intelligent (and omnipresent) Chad Wackerman gets to work out on his drumkit a full minute longer—probably the first instance in which a rock album has been improved by lengthening a drum solo. “In-A-Gadda-Da-Vida” this ain’t. Cal Schenkel’s new artwork, too, is a vast improvement. Another must-have.

Odds & Ends: My listening turned up a few other curiosities on various albums in this definitive edition—some good, some bad, some just curious. I’m sure more will be discovered as time goes on (send in those cards and letters). For now, chew on these tasty little suckers:

Cruising with Ruben and the Jets: Nope, sorry, those awful ’80s-vintage bass and drum tracks (Barrow and Wackerman) are still there, and the pachuco falsetto quotation of the opening bassoon solo from Stravinsky’s Rite of Spring on the fadeout of “Fountain of Love,” heard only on the very first Verve LP pressings, is still missing. Someday...

The Grand Wazoo: “For Calvin (and His Next Two Hitchhikers)” and “The Grand Wazoo” have been switched. The album now starts with the title track.

Rox & Elsewhere: “Creeper” has been remixed, revealing many hitherto hidden details in the rhythm–guitar part and horn chart. A definite improvement, though the dial-twisting is anything but subtle.

You Are What You Is: When reissued on CD, this album’s “Dumb All Over” found itself lacking 1:47 of FZ’s guitar solo—virtually the only seconds of instrumental excellence on an otherwise overproduced and almost unlistenable album. Unfortunately, that guitar solo is still missing.

Frank Zappa Meets the Mothers of Prevention: The original LP of this was released in quite different US and UK versions, the former’s long “Porn Wars” reissue

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RECORD REVIEWS

RECORDING of the MONTH
Selected by JA and RL


These challenging, satisfying works have languished, seldom performed and almost never recorded, for the better part of the 20th century—much as J.S. Bach’s Sonatas and Partitas for Solo Violin slumbered until reawakened by Mendelssohn and Schumann in the first half of the 19th (albeit with those composers’ added piano accompaniments). After Bach’s works for unaccompanied strings, the form was not taken up again in any serious way—certainly not by any composer of importance—until Reger himself did more than 150 years later.

However, these Sonatas are not mere pastiche, imitation, or Bach à la Reger. Though revering Bach above all other composers, Reger brought to the composition of his own works for unaccompanied strings his knowledge and complete digestion of everything that had been written in the interim. (Imagine Mahler composing the first symphony to be written since the “Jupiter.”) Here are quiet pools of Schubertian clarity and grace among the contrapuntal thicket, what sounds like a flirtation with the 12-tone row (Sonata 3’s Prestissimo), and post-Wagnerian chromatic modulation wielded with wit (the cascading modulations in the Allegro moderato of Sonata 5)—all grounded in fugues (the Allegro evocativo of Sonata 1) as starkly inevitable as those of Bach himself.

Yes, those fugues... Like Bach, Reger had a strong interest—perhaps an obsession—with counterpoint. His orchestral works are so cross-braced with opposed themes and rhythms that even Reger worried about their “turgidly.” Hence the appeal to this strenuously productive composer of clearing the compositional air by writing for solo strings—something he did more than 20 times between 1900 and 1915. (As he described it, “For me, the compositional process involved in writing for the solo violin is like wearing a chastity belt.”) The task of convincingly maintaining multiple voices on a single instrument on which only one note at a time can be easily played is difficult enough. That these works are so much more than the diry, academic exercises they were condemned as when first performed—and that Matié’s performances meet them head-on with such loving aggression—add up to a disc that fairly demands praise.

Reger’s seven Op.91 Sonatas evince toughness of form, passionate rigor, and a grim joy in formal difficulties overcome that bring to mind the unique sense of accomplishment felt by performers and listener alike at the end of a traversal of the Bach solo works. The four Sonatas recorded here are every bit as thrillingly rewarding as the three of Vol.1. some of them—especially in the fast movements—downright lyrical in their muscleality. (Though there’s nothing here like Sonata 7, which ended Vol.1 with its massive Chaconne’s clear debt—replayed with interest—to the Chaconne of Bach’s D-minor Partita.) These works have an inner stature hard to reconcile with their virtual ostracism from the standard repertoire. They deserve to be played, recorded, heard, and heard again. Perlman? Shahn? Delmoni? Sitkovetsky? Vengerov? Chee-Yun? Get cracking.

As good as Ulrike-Anima Matié was on the first set, her playing seems to have matured dramatically in the more than two years between sessions (she’s still only 26). Her tone now sounds warmer, fuller, more rounded—a perfect foil for the undiminished stringency of her bite and attack, her well-nigh perfect rubato, and the unerring sense of rhythmic line in which the pulse of these torturous works is never allowed to falter.

And the sound! This is one of Dorian’s most satisfying recordings—they’ve got the Troy Savings Bank Music Hall down. This recording treads a razor’s edge between Dorian’s Trojan tendencies (leasened of late) toward bright over-reverberation, and the distant muffledness of their larger-scaled sessions in Dallas’s Meyerson venue. The balance is absolutely perfect. Matié’s violin is the sound of a single, inexorable train of thought reverberating through the crystalline space of pure consciousness.

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The first volume of secular cantatas from Labadie and his Canadian group was reviewed in March '95 (Vol.18 No.3), where JA and RL selected it as "Recording of the Month." These are very much in the same vein, so a short review will suffice.

The main difference here is that both pieces are solo cantatas for soprano, so a lot of weight falls to Dorothea Röschmann. As I noted earlier, her voice is fuller than we often hear in Bach, so the high writing (particularly in O holder Tag) is fairly intense. This is not a straight-toned, girlish Emma Kirkby! If you wanted to be critical (I don't, particularly), you could say she makes the music sound more formidable and difficult than it should.

On the plus side, Röschmann's is a lovely voice, easily up to the passage work and accompanied by an intelligence that makes her singing always interesting.

As I noted with Vol.I, Bernad Labadie consistently finds tempos that sound just right: brisk, alert, and articulate without sounding arbitrary or mannered. His chamber group (strings 4-4-2-2-1) uses modern instruments (with period bows); they make a wonderful case for maintaining that tradition in the face of (often dreary) period-instrument versions.

As JA said for Vol.I, sonics are just about ideal. Balances between strings and harpsichord, between soloist and orchestra, and between dry clarity and warm reverberation are all excellently struck. Recommended! —Paul L. Althouse

BARTÔK: Bluebeard's Castle
Katalin Szondy, Judith; Falk Struckmann, Bluebeard; Radio-Sinfonie-Orchester Frankfurt, Elisabeth Inbal
Denon CO-78932 (CD only). Yoshiharu Kawaguchi, Richard Hasek, prods. DDD. TT: 59:41

BARTÔK: Bluebeard's Castle
Tatiana Troyanos, Judith; Sieg mund Nissengam, Bluebeard; BBC Symphony Orchestra, Pierre Boulez
Sony Classical SMK 64110 (CD only). Paul Myers, prod. ADD. TT: 61:14

There's almost no action and only two characters, and all the colors, all the scenery, are in Bartok's phenomenal orchestration. In other words, Bluebeard's Castle is the ideal phonogenic opera. It rarely fails on disc; only the Ramey/Marton pairing (on Sony) is mediocre, due to his lack of involvement and her matronly sound. These two new releases—one a welcome re-release, one an all-digital spectacular—are interesting.

Inbal on Denon, aided by the producers and engineers, offers a true, vivid recording, in which all of Bartok's score can be heard and appreciated instrument by instrument, texture by texture. But there are problems. For starters, Judith is more often sung by a mezzo (I believe the part was composed for that voice) and requires really dark coloration most of the time (despite the blazing high C at the opening of the fifth door), and Katalin Szondy's ample soprano lacks the necessary warmth. And frankly, the voice isn't attractive—she's just not that pleasant to listen to. Both she and Struckmann are involved and expressive, however, and the drama comes across. One could use more tension in Inbal's leadership as well—he allows the terrible tale to unfold sadly and inexorably, but we don't shudder as often as we should.

There are shudders aplenty in Boulez's reading, due mostly to his two singers. Troyanov's gorgeous mezzo is amazingly vivid and rich as she moves from terror to arrogance and back over the course of the hour in a way rivaled on CD only by Christa Ludwig (London). And Nissengam, with a grainless, at times desperate sound, is the perfect Bluebeard, powerful and helpless at once.

Now, about Boulez: His tempos are amazingly slow (the Denon includes the opera's spoken opening, and so the difference in timings is greater than it appears), and his attention to detail is almost surrealistic. But somehow it works. The work gets heavier and heavier as it goes along, but the tension remains. It's often argued that this opera is closer in spirit to the French impressionists than anyone vaguely Eastern European; that might explain Boulez's affinity with it.)

And the recording is excellent 1976 analog—a bit artificially bright, perhaps (Denon's is absolutely honest), but it won't present a problem; the higher volume level might even be an asset.

I'd still go for the Kertész on London with Ludwig and Berry (though I also like Burgess and Howell on BBC, in English) as a first choice, but Boulez is riveting. And the Inbal? Well, it's a pity there's so much to compare it to—it's good, but just not good enough.

—Robert Levine

BEETHOVEN: Symphony 9 ("Choral")
Robert Alexander, soprano; Florence Quivar, contralto; Gary Lakes, tenor; Paul Plishka, bass; Ambrosian Singers; André Previn, Royal Philharmonic Orchestra

André Previn over a number of years has recorded five out of Beethoven's nine symphonies (4 through 8), but the present release, now five years old and available for the first time, is, to the best of my knowledge, his first Ninth. It basically is a traditional interpretation with a powerful, building first movement and an alert, even vehemence second (the prominent timpani emerge almost like cannon shots). I could not, however, get overly enthused over the rather flat slow movement, unlofty enough to emerge as a prosaic non-event. The finale's unusual feature, specially at the outset, is the degree of reflective lyricism—far more than one normally hears—and the team of soloists is unusually distinguished. However, it is only the very final pages that dramatically convey the impact of Beethoven's vision. Although internal clarity was evident in wind passages, the massed sound of the somewhat distant orchestra, and with the choral sections even more aggrieved, was disappointingly muddy, especially in the bass. An example is the opaque sound of the lower strings in the second movement's fugal entries.

—Igor Kipnis

MOZART: The Marriage of Figaro
Lucio Gallo, Count; Karita Naita, Countess; Marie McLaughlin, Susanna; Michele Perusini, Figaro; Monica Bacelli, Cherubino; Nicoletta Curiel, Marcellina; Angelo Nosotti, Bartolo; Ugo Benelli, Bassio; Gennaro Sica, Don Curzio; Giorgio Tadeo, Antonio; Laura Cherici, Barbarina; Orchestra of the Maggio Musicale of Florence, Zubin Mehta
Sony Classical S3K 53286 (3 CDs only). Uli Schneider, Pauline Heister, engs.; Dorian Shoes, prod. DDD. TT: 3:55:39

MOZART: The Marriage of Figaro
Thomas Hampson, Count; Charlotte Margiono, Countess; Barbara Bonney, Susanna; Anton Schraringer, Figaro; Petra Lang, Cherubino; Ann Murray, Marcellina; Kurt Moll, Bartolo; Philip Langridge, Basilio; Christoph Spith, Don Curzio; Isabel Rey, Barbarina; Keveu Langan, Antonio; Concentus Musicus Wien, Nikolaus Harnoncourt
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Teldec 90861-2 (3 CDs only). Michael Brämmann, eng.; Helmut Mühle, prod. DDD. TT: 3:08:58

MOZART: Overtures


Nikolaus Harnoncourt, Concentus Musicus Wien, Royal Concertgebouw Orchestra, Zurich Opera Orchestra, Mozart Orchestra of Zurich

Teldec 95523-2 (CD only). DDD. TT: 55:29

It is quite possible, on listening to these Fígaros, to think one is hearing two utterly different operas. Certainly each release provides another example of how a conductor can determine the way in which a work is perceived.

The Sony set may prove a bit of a surprise in its revelation of Mehta’s Mozartian sympathies. If not a great Figaro, it is a very good one that becomes more impressive as it unfolds. Sonically it offers a close, slightly spotlighted vocal sound with little theatrical ambience. But such intimate engineering suits the work well; this is not, after all, Grand Opera–Mehta’s basic approach is relaxed, unaffected, and stylish. The latest Mozart edition is followed, with appoggiaturas usually rendered on the beat.

The virtues of the set are many. Pacing, although often more leisurely than usual, never seems to drag, the prevailing breadth permitting significant orchestral detail often lost in other performances emerging with telling point. This is especially important in Mozart’s mature operas, where the orchestra functions as a significant commentator on the action. Furthermore, it italicizes the boldness of the writing. In Cherubino’s “Voi che sapete,” for example, listen to the way the orchestra defines the scene. The music’s stark harmonic turns and, as a result, the aria’s gorgeous sensuality. Note, too, how the little Susanna–Cherubino duet, “Aprite, presto, aprite,” gains in its hurry-scurry humor as a result of not being rushed. And a further advantage of the pacing is that it exposes the details of Mozart’s extraordinary complex ensembles, in which each character retains dramatic individuality while fitting musically into the intricate polyphonic web.

What, then, keeps this performance from ranking, say, with the great ones led by Erich Kleiber and Colin Davis (his earlier Philips edition)? For one thing, the cast, though generally good, does not quite match the highest phonograph standards. Furthermore, there are moments that sound too relaxed, and in need of the kind of tension that Kleiber and Davis generate. Having noted this, I think it important to add that such comparisons, if necessary, do a disservice to this basically fine account—which, if heard in the theater, would merit high praise. Competition, especially in aesthetic matters, need not be a good thing.

Right from the start, Harnoncourt’s Figaro has two advantages over Mehta’s: a stronger cast and a more colorful, virtuoso orchestra. These virtues should translate into a superior performance. They don’t. This is not to say that Harnoncourt’s direction is completely inferior. Rather, it is, beyond question, the most individual, off-center approach I have encountered. Even the admirable period-instrument production led by Ostman sometimes sounds more conventional than this one.

There are, of course, elements of the “authenticity” movement in Harnoncourt’s direction, notably in an orchestral sonority defined by vibrato-free strings, piquant winds, and biting brass. Then, too, Harnoncourt’s pacing is, to say the least, shocking—usually uncommonly slow, but sometimes faster than is customary. Even more disturbing is the conductor’s manipulation in an attempt to emphasize the libretto’s sense. In Figaro’s Act I “Sà a caso madama,” for instance, every time he sings “din, din, don, don,” the pulse is ruptured, as if to suggest that ringing a bell requires great effort. And on several occasions Harnoncourt asks his singers to depart from musical pitch in order to stress the text.

Sprichtung may be fine for Schoenberg, but it has no place in Mozart. Granted, it has some effectiveness as applied in recitatives in this performance, but even the hint of it that occasionally intrudes in arias is outlandish. After all, what makes Mozart’s operas extraordinary (among other things) is the way in which his music illuminates character and generates drama. And the means through which this illumination takes place is a matter of the boldest musical strokes incorporated with an ease and grace that conceal their audacity.

I mention this because Harnoncourt’s excesses are the antithesis of that ease and grace, and sometimes come dangerously close to vulgarity. All the same, this set cannot be dismissed. For one thing, it contains many instances of beautiful singing. Charlotte Mangiono’s Countess is intense yet delicate, wonderfully controlled, and almost haunting in the way she projects suffering. And it is refreshing to hear her “Dove sono” emerge with a tender, lyric longing and conclude with a fierce vibrance free of the affected ritard often imposed on the aria’s conclusion.

Thomas Hampson manages to overcome Harnoncourt’s eccentricities, conveying the Count’s ineffectiveness and rage while remaining musical. Impressive, too, is Anton Schäringer’s Figaro, his Act IV “Aprite un po’ quel’occhi” projecting a tough cynicism heightened by the rich detail Harnoncourt brings out in its orchestral accomplishment.

Elsewhere, as well, the conductor shines. His pacing of the Act III finale, if unorthodox in its mixture of breadth and haste, is eminently stylish. But other passages lack such styliness. Perhaps the best way to characterize Harnoncourt’s direction is to say that it is sometimes too thoughtful in a literal, even clinical way. As notes in the accompanying booklet make clear, he has given very careful consideration to this opera and offers highly rational explanations for some of his unusual practices—his very broad pacing of the overture being a case in point. The end product, however, is a performance that may well offer too much “head” at the expense of sufficient “heart.”

Both Fígaros include quadra-lingual librettos. Mehta’s also offers an earlier version of the Count’s Act III “Hai già vinta la causa,” which is interesting for revealing how Mozart, like so many great artists, created through a process of refinement and tightening. A final word about the Harnoncourt set: its sound, if less boxy than that of Mehta’s, is more suggestive of a concert hall than of a theater. And whatever its musical peculiarities, it is a performance that should at least be heard by anyone who cares about this extraordinarily beautiful and complex opera.

The single disc of eight overtures features the same sonority as Harnoncourt’s Figaro. Indeed, the overture to that opera is drawn from the complete recording, as are some others in the anthology. This causes a problem in the overtures to Don Giovanni and Abduction, which conclude in mid-air without appropriate concert endings. But in the main, nothing here (save, possibly, the overly prominent percussion in Abduction) is exaggerated; and, given the fine sound and crisp, dramatic execution, this release should prove attractive for anyone seeking such an anthology.

—Mortimer H. Frank
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Yefim Bronfman, piano
Sony Classical SK 52484 (CD only). Gary Schulz, prod.; Kevin P. Boutote, eng. DDD. TT: 51:44

PROKOFIEV: Piano Music, Vol. 4
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Harmonia Mundi HMU 907150 (CD only).
Robina G. Young, prod.; Brad Michel, eng. DDD. TT: 64:22

I have tried desperately to like this disc in its entirety, but I've failed. The music is glorious and gloriously played; Hogwood seems to get better and better as a conductor. He infuses Purcell's lively music with appropriate energy and similarly treats the more introspective works with a stillness and intimacy that make absolute musical and theatrical sense. His band has become an advertisement for period instruments as well: crisp, articulate, true-topitch playing without any scratchiness. And the recording is ideal; Philips at its warm, forward, natural best.

Of the 23 numbers, nine are instrumental but at least three—the opening reading of 'War and Peace,' the sonata in B minor, and the 'Witches' Brew' from Fairy Tale—are at least as much about a brazenly beautiful performance as about the music. The recording is alive, not at all forced, and the performance, while not quite as forthright as that of Harnoncourt and Kuijken, is more than acceptable in these works.

Purcell's 'War and Peace' sonata is played with fire and guts and passion by the Barenboim, while the 'Witches' Brew' from Fairy Tale is a slick, polished performance.

Harmonia Mundi 907167 (CD only). Robina Young, prod.; Paul F. Witt, eng. DDD. TT: 75:55

This very attractive collection of 13 Purcell songs with three songs of John Blow places soprano Christine Brandis in the spotlight. She has specialized in 17th- and 18th-century repertory (Purcell, Handel, Rameau, Bach), but her name has not been prominent. That situation is bound to change, because hers is as wonderful an instrument for this music as you'll ever hear. Her intonation, diction, and range of color are all exemplary, and she handles the wide variety of Purcell's styles with ease. The runs in "Dry Those Eyes" and "Fly Swift, Ye Hours" are clear, the drama of "Lord, What Is Man" and "The Blessed Virgin's Expostulation" are convincing, and the humor of "Cupid, the Slyest Rogue Alive" and the raunchy "When First Amintas" are well-characterized. She's a delight.

Also delightful are the instrumental contributions of the Arcadian Academy (two violins, archlute/theorbo, harpsichord/organ), joined by gambist Mary Springfels. They accompany the songs and by themselves play two sonatas (one from each published collection) and one of Purcell's five pavans.

The sonics are beautifully clear, with everything in natural balance. Recommended without reservation. (When you see Brandis's name in lights, remember where you saw it first!) —Paul L. Althouse

SAINTE-COLOMBE: Concert Pieces for Two Viols
Anne Marie Lasla, Sylvie Moquet, viol
Alphée 9308002 (CD only). Emmanuel Mandrin, prod.; Simon Derasse, eng. DDD. TT: 66:59

As far as I can tell, this is the only CD in the catalog devoted entirely to the works of the enigmatic M. de Sainte-Colombe; if you enjoyed Alain Corneau's film "Tous les matins du monde" as much as I did, you will definitely want this disc. If, on the
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other hand, you haven't seen the film, and are unfamiliar with Sainte-Colombe and his music, a bit of introduction is in order.

In the hands of the great 17th-century French composers, the viol speaks an intimate language, and nowhere more so than in the works of Sainte-Colombe. A recluse from Court life, Sainte-Colombe wrote many of his finest pieces for the little consort composed of himself and his daughters; thus, the intimacy of his compositions is literal as well as figurative. Like a conversation between two friends, they say only what needs to be said. The vocabulary of these Concerts includes little in the way of grand gestures; it needs to be listened to rather than merely heard.

Anne Marie Lasla and Sylvie Moquet play together beautifully; if I might wish them a bit less restrained at time, I certainly appreciate the sympathetic union of their voices. The word "nobility" attaches itself easily to Sainte-Colombe's style, and Lasla and Moquet bring this out perfectly—as befits students of that fine consort violin Wieland Kuijken. If they lose a bit in comparison to the great Jordi Savall, they can be forgiven—everyone else falls a little short of that standard as well.

Listen, though, to how marvelously they play the memorial piece, Les Roget, with its sadness and hope; one cannot really wish a finer performance. Alas, I must also report that the quality of performance is somewhat betrayed by the sound, which is far too close and detailed for my taste—and I would rather have things a bit on the dry side than too reverberant; if we must depart from perfection.

Here there is far too much extraneous noise from the fretboards, and breathing from the musicians. To be sure, this is what you would hear at a live performance, but not to the extent captured on disc; bass strings, perhaps more than any other instrument, need room to allow their sound to expand and warm the air. Recommended, nevertheless.

—Les Berkley

YO-YO MA: The New York Album


Yo-Yo Ma, cello, alto violin*; David Zinnman, Baltimore Symphony
Sony Classical CK 57961 (CD only). Stephen Epstein, prod.; Bud Graham, eng. DDD. TT: 78:04

How do you get a "New York Album" out of a recording by a French-born Chinese soloist of works by a Hungarian, a Swiss, and an American whose work was written on a commission from the Baltimore Symphony?

The album title was Ma's idea. The soloist explains that the late Stephen Albert was a Brooklyn native, Bartók lived in New York during the period in which he produced his final works—including the concerto on this disc—and that Bloch's Schelomo received its world premiere in concerts by the New York Philharmonic. Furthermore, David Zinnman hails from the Bronx, and Ma himself has been a steadfast New York resident since childhood.

Albert's work has a dark and elegiac character—all the more so if one knows that the composer was killed in an auto accident in late December 1992. The Cello Concerto which was premiered by these performers in 1990, is considered by many to be the finest work by a composer whose talents and potential influ-

** Yo-Yo Ma literally on the town in The New York Album. **
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ence the profession could scarcely afford to lose. As moody as the piece is, there are moments of brightness, as well as the requisite games of velocity for both soloist and orchestra.

At first blush, the inclusion of Bartók’s Viola Concerto seems a bit strange for a cellist’s repertoire. Violists have a far greater need to search for works to adapt or adopt than do cellists, but there are rationales. Tibor Serly, who translated Bartók’s cryptic sketches for this work into a playable score, also prepared a version for cello (recorded by János Starker with Leonard Slatkin/St. Louis Symphony). The cello version involves numerous octave transpositions and altered relationships between soloist and orchestra—not to mention the radical difference in sound between the cello and the viola.

The alto violin used by Ma for this performance comes from a set of instruments created by luthier Carleen Hutchings. The alto violin plays the same register as the viola, but is played vertically and supported by an end pin—as is the cello. Its sound is like that of a viola, but with a husky baritone quality. Imagine an instrument playing the same register with a light female alto quality. This change does alter the character of the piece somewhat. Bartók wrote magnificently for the viola throughout his life, and that husky sound was the very quality he sought.

Nevertheless, Ma makes the piece work on his terms with the instrument he has chosen. Modern phonology makes it possible for listeners to compare not only the performance of the cello version, but an excellent original viola version by Pinchas Zuckerman (also with Slatkin/St. Louis). As with the other works on this disc, on Schelomo Ma is joined by passionate, fully committed, expert playing by Zinn man/BSO. Supported by an ideal audio production that places the listener in the hall and maintains a believable relationship between soloist and orchestra, The New York Album is not to be missed.

—Richard Schneider

Jazz & Blues

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When he steps back from it a bit, Anthony Braxton is so analytical about his music that it’s possible to be caught up in his descriptions of, say, the 10 or 12 “primary language types” of phrasing he has isolated and ignored the delight spirit that underlies his compositions and playing.

He’s an enthusiast who loves Sousa, Fats Waller, and Fletcher Henderson as well as Coltrane, Schoenberg, and the AACM. When he put together the march that ends this two-disc set, he wasn’t par ody ing the form or making ironic comments about the military. As he says, “I’ve always approached the traditional music with love and respect and excitement.”

His big-band music is challenging but fresh—and, to my ears, thrilling in its sweep and range. It’s also frequently cacophonous and a little wild, as Braxton links his written pieces with sections of improvisation in which he cues various musicians in rapidly changing groups, instructing them to play various kinds of sounds and then letting them go at it. These techniques work because of the musicians involved—in this case veterans of Braxton’s music such as George Lewis, Kenny Wheeler, Thurman Barker; relative newcomers (then) such as pianist Marilyn Crispell and Michael Mossman; and several figures that I assume he picked up in Europe. In the improvised sections we have an exciting, bumbling solo by George Lewis that turns into a duct with synthesist Bob Ostergar, and striking contributions by Marilyn Crispell, Bobby Naughton, and, in fact, by most members of the band:

Braxton uses these controlled improvisi-
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226 WorldRadioHistory Stereophile, September 1995
sations to link or introduce his compositions, four of which were previously recorded on his Arista LP Creative Orchestral Music 1976. These include, notably, Braxton's buoyant tribute to the big-band era, "Composition 45"; the march piece "Composition 58," heard on this new disc in full for the first time; and "Composition 59," which Braxton describes as related to "post-Stockhausen/AACM structural dynamics."

Some readers may be relieved to hear that we're in a post-Stockhausen era. They, like all fans of adventurous jazz—and of John Philip Sousa—should hear Creative Orchestral (Köln) 1978.

The closely miked sound doesn't produce much of a feeling of depth, but the music is clear enough in all but the densest passages. —Michael Ullman

The songs of Stephen Sondheim are honored by contemporary jazz masters on Color and Light: Jazz Sketches on Sondheim.

COLOR AND LIGHT: Jazz Sketches on Sondheim
Peabo Bryson, Nancy Wilson, Holly Cole, vocals; Terence Blanchard, trumpet; Wayne Shorter, soprano sax; Grover Washington, Joshua Redman, tenor sax; Jim Hall, Oscar Castro-Neves, guitar; Brad Mehldau, Geoff Keezer, Bruce Barth, Herbie Hancock, Aaron Davis, Stephen Sondheim, piano; Christian McBride, Chris Thomas, Scott Colley, David Pitch, bass; Brian Blade, Marvin "Smitty" Smith, Troy Davis, Jeff Hirschfield, drums
Sony Classical SK 66566 (CD only). Miles Goodman, Oscar Castro-Neves, prods.; Joel Moss, eng. DDD. TT: 54:00

In her last years, Sarah Vaughan consistently used Stephen Sondheim's "Send in the Clowns" as a bravura encore. Sweeping through her whole range, whispering one moment and shouting the next, she demonstrated her virtuosity while attenuating the song's lurking sentimentality.

Jazz players and singers have been performing "Send in the Clowns" ever since. But it's remarkable, given Sondheim's popularity with the general public, how few of his songs are heard in jazz clubs. It may be that his pieces seem specific to the shows in which they appear; or it may be that Sondheim's literate lyrics and the emotional baggage they carry, his unusual lines and harmonies, seem intimidating or overwhelming, unlikely to respond to variation and swing. It may be that jazz players have simply stopped listening to Broadway shows.

Producers Miles Goodman and Oscar Castro-Neves thought up Jazz Sketches on Sondheim after listening together to the musical Into the Woods. They have assembled an absolutely stellar cast for the project. With his wonderfully alert approach to harmony and line, guitarist Jim Hall is a natural for this project; and yet, among my dozens of Hall records, I don't find him playing any Sondheim tune.

Hall is heard on "One More Kiss" and the evocative "What Can You Lose?" It's wonderful to hear him introduce the latter song in a series of questioning phrases, then lighten the texture and start to swing for the entrance of his rhythmic section. After shifting the chords around a bit, Grover Washington swings through "Every Day a Little Death," thankfully ignoring the implications of the title and lyric.

But it's the young pianist Geoff Keezer whose bright, strong chords shine on that piece. Terence Blanchard's take on "Poems" unfolds over a wilder beat, proving that not all Sondheim has to be sweetly colored. Herbie Hancock plays two musing performances that would be highlights on almost any disc, plucking the piano strings in one chorus of "Color and Light," then giving that piece a sharp-edged yet evocative performance that to some listeners might verge on the avant-garde. It's some of Hancock's most interesting playing. Hancock also follows Sondheim's own chorus of piano on "They Ask Me Why I Believe In," creating variations on what Sondheim stated literally.

Among the singers on this collection, Nancy Wilson sounds warm, articulate, and graceful on her three songs—including one with Peabo Bryson—previously unknown to me. But did the fine singer Holly Cole choose the oddly sentimental "Children and Art," in which she tells of a mother who always said that there was something—the something remains unstatesed—"about children and art"? The prosy lyric is made sentimental by its final vagueness.

I'm a minority of one in my household who finds "Losing My Mind" equally sentimental, even if enlivened here by Cole's intimate singing and Wayne Shorter's beautiful accompaniment and solo. It tells of someone who, from the time she wakes at dawn until she goes to sleep, and while performing a lengthy list of prosaic tasks in between—including standing on the floor "not going left, not going right"—always "thinks (s) about you." This song, like the rest of the recording, sounds beautiful, rich, and warm, with remarkable presence and clear imaging. Despite my reservations about much of Sondheim's work, I recommend this disc to any jazz fan. —Michael Ullman

Just a preview of a six-CD Standards set due out later this fall, Keith Jarrett's Standards in Norway is completely satisfying on its own.

KEITH JARRETT TRIO: Standards in Norway
Keith Jarrett, piano; Gary Peacock, bass; Jack DeJohnette, drums
ECM 1542 (78118-21542-2, CD only). Manfred Eicher, prod.; Jan Erik Kongshaug, eng. DDD. TT: 73:29

Standards in Norway is not a new recording in Keith Jarrett's "Standards" series—it was recorded live at Oslo's Konserthuset in 1989. When record companies wait six years to release an album by a popular artist, there's usually a reason.

None is obvious here. Perhaps ECM held off because half the songs on Norway had appeared on Tribute, which was recorded in Köln a week later and released in 1990. Perhaps Manfred Eicher preferred the sonic quality of the Köln tapes to those made in Oslo. But if Tribute provides cleaner edges on Jarrett's piano and more glisten on DeJohnette's cymbals, the superiority is subtle. All of ECM's live recordings of Jarrett's trio focus closely on the three instruments, while also recovering enough ambient cues to place them in a large space.

It may seem surprising that Jarrett, who began his career with a series of totally improvised solo concerts, should end up playing "I Hear a Rhapsody" and "Just in Time" in a conventional trio. But his artistic path is a natural one, analogous to a painter who moves from total abstraction to work with representational references. Jarrett's freedom in the solo concerts leads directly to the liberation of his standards. The famous themes are coordinates, starting points for both himself and his listeners.

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Stereophile, September 1995
vitional about this trio. Gary Peacock and Jack DeJohnette are more than a rhythm section—they’re co-equals in the unfolding. Peacock is the whirling energy on which this music rides, and DeJohnette is myriad points of light.

The ballads here (“Little Girl Blue,” “Old Folks,” “Dedicated to You”) are serious, searching aspirations toward each song’s truth. The faster pieces (“Just in Time,” “How About You,” “Love is a Many Splendored Thing”) sweep you up in their momentum, Jarrett’s right hand raining ideas. When the outpouring finally carries him back to the melodies, it’s always a rush of rediscovery.

*Standards in Norway* is a welcome addition to the most important series of jazz piano recordings since the death of Bill Evans.

—Thomas Conrad

**JUNIOR KIMBROUGH: Sad Days, Lonely Nights**
Fat Possum/Capricorn 42081-2 (CD only).
Robert Palmer, prod.; Robbie Harris, eng. TT: 65:47

**R.L. BURNSIDE: Too Bad Jim**
Fat Possum/Capricorn 42082-2 (CD only).
Robert Palmer, prod.; Robbie Harris, eng. TT: 41:06

**DAVID MALONE & THE SUGAR BEARS: I Got the Dog In Me**
Fat Possum/Capricorn 42084-2 (CD only).
Bruce Watson, prod., eng.; Peter Redvers-Lee, prod. TT: 42:32

For all the blues records currently being made in the wake of the most recent blues “revival,” relatively few capture the true sound of the blues. For all their purported love of the idiom, most producers try to tart up the music in an effort to reach “a wider audience.” Thank God Robert Palmer (the blues scholar/writer/producer, not the singer) and Bruce Watson have, on these three Fat Possum releases, opted to leave the wider audience to their Mariah Carey records and chosen to follow the lead of the Lomax clan in recording the blues where they live—in this case, a juke joint in northern Mississippi.

Specifically, they have recorded Junior Kimbrough in his own joint in Chutahoma. Kimbrough’s guitar sound and style are closer to Mombassa than to Mississippi. Rather than the intimate, backporch feeling of delta blues, songs like “I’m In Love” and the title track hark back to the communal hypno-grooves of Africa à la Ali Farka Touré. This is trance dance music without the techno: the vocals are not central but rather enter the grooves at intervals, crying out for love and sex.

The blues of Kimbrough’s neighbor, R.L. Burnside, are more familiar. We’ve heard his style of singing slide guitar portrayed by everyone from Muddy Waters to Taj Mahal to John Hammond to Roy Rogers. “Fireman Ring the Bell” recycles the “Rollin’ and Tumblin’” riff that has served Johnny Winter, Cream, and the Yardbirds well. (It’s interesting that, while this style of blues has served as fodder for countless white blues artists, it’s nearly impossible to imagine anyone of the Caucasian persuasion attempting Kimbrough’s idiosyncratic style.)

What sets *Too Bad Jim* apart is that it presents one of the last artists to have lived the life (Burnside learned from his neighbor Fred McDowell) at the height of his powers—not always in tune, but always in control. Once again, Palmer has recorded it right. Whether at the joint or in the studio, the sound is clear but not clinical; dark, as befits the music, but never muddy. These two discs represent the kind of blues that inspired PJ Harvey’s *To Bring You My Love*, they’re as deep and real as it gets.

A little more prettified and cinched is Kimbrough fils David Malone’s *I Got the Dog In Me*. Malone and his Sugar Bears take Dad’s dance-groove influence and add the soulful screams of James Brown and Wilson Pickett and some silky seductiveness à la Prince.

But, rather than coming out as Robert Cray redux, Malone, in tunes like “Home Alone” and “You’re Touching Me the Wrong Way,” more closely recalls the late ZZ Hill. This is as much soul music as blues, though it’s the Southern soul of Hill’s last label, Malaco, and Stax, where such distinctions are blurred.

Malone is a strong, believable singer; *IGTDIM* has the same raw energy as the other two discs, but this kind of music is less forgiving of tuning imperfections (I’m being kind here), and the production falls into that netherland between live and studio that fails to serve the music.

But, hey, give the kid a break. If, like Dad and R.L. Burnside, he’s in it for the long haul, he’s got time and talent for many great records to come.

—Michael Ross

**HILTON RUIZ: Hands On Percussion**
Hilton Ruiz, piano; Charlie Sepulveda, trumpet; Papo Vasquez, trombone; David Sanchez, Jose D’Leon, tenor sax; Dave Valentin, Peter Brainin, flute; Tito Puente, vibes, timbales; Andy Gonzalez, bass; Ignacio Berroa, drums; Steve Berrios, timbales; Giovanni Hidalgo, percussion

In the notes to *Hands On Percussion*, Hilton Ruiz, a Puerto Rican pianist who became known decades ago playing straight-ahead with Roland Kirk, talks of the “extra energy” you find when you add Latin to what he calls “regular jazz.”

He shows us what he means on such numbers as Duke Ellington’s ‘40s masterpiece “Cottontail,” a tune based on “I Got Rhythm,” which in Ellington’s arrangement featured Ben Webster. It’s a remarkable example of Ellington’s pre-bop style. Ruiz makes it his own by adding the three-piece Latin percussionists on the scene, by writing fast solo passages derived in part from the original, and by letting tenor saxophonist David Sanchez wail in his own blues-driven style. His own neatly articulated solo makes the question of merging bop and Latin seem merely academic. The new music is just there.

It wasn’t always that way. After Dizzy Gillespie helped popularize Afro-Cuban jazz in the ‘40s, many groups threw in a generic mambo every third number, sometimes adding a bongo player who lurked around the edges of the stage sounding tame and looking a little foolish.

That’s changed. Musicians like Hilton Ruiz are now equally comfortable with jazz and the various Latin rhythms, and they’re confidently building on what Mongo Santamaría and Tito Puente have done in previous decades. Their arrangements are more sophisticated—the trumpets do more than shriek—their rhythms more authentic and exciting. New stars are emerging: the rhythm section of Andy Gonzalez, Berroa, Berrios, and Hidalgo may seem inevitable to fans who have been following Latin jazz—as inevitable, and as accomplished, as the Blue Note sections from the ‘60s. The drummers are featured on “Manenguitos Way.”

Ruiz features Tito Puente on timbales on the opener, Charlie Parker’s “Ornithology,” and Puente plays vibes in his particularly uncluttered, pure-sounding style on the next tune, an elegantly moody “Round Midnight.”

Ruiz is the other soloist: he’s always been an exciting pianist, and now he seems more lyrical as well as more focused and clear—a better editor, perhaps. He’s also a fine bandleader, as the ensemble sound of *Hands On Percussion* proves.

It helps that the session was recorded well. The stage is framed by the percussionist, with the rest of the band set back
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—Michael Ullman

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**Laurie Anderson: Bright Red**

Maybe Andre Agassi’s right: image is everything. In *Bright Red*, Laurie Anderson displays a facile rapport with pop culture that puts Weird Al Yankovic to shame. In The Ugly One with the Jewels, she spins tales in a way that would make Garrison Keillor proud. And yet because she dresses in black and writes “occupation: performance artist” on her tax return, she’s been stuck with this Knitting-Factory-meets-Vanity Fair rep. That’s too bad. She’s a lot more fun, and a lot more serious, than that.

On *Bright Red*, Anderson makes it clear that she’s been listening to more than Meredith Monk. One minute she’s making allusions to Springsteen’s a-guy-and-a-girl-and-a-car world-view, the next it’s to the kind of people who see the world through the frame of an Annie Dillard book. One minute it’s Peter Arnett’s Persian Gulf play-by-play, the next it’s the Owl and the Pussycat revisited.

But Anderson’s jambalaya of pop-cultural references is fully digested and sharply focused. Loss is her theme here: death, lost loves, broken connections, and, most of all, lost innocence. “When my father died it was like a whole library had burned down,” she says almost too matter-of-factly.

This may sound like a drag, but Anderson is too dryly funny to let *Bright Red* degenerate into an angstfest. The album’s centerpiece, “Tightrope,” begins with the line “Last night I dreamed I died,” followed immediately by “and that my life had been rearranged into some kind of theme park.” badBoom.

The words, haunting though they may be, are only half the story. Eno and Anderson manage to almost capture the sounds of a dream, sprinkling an ethereal sonic canvas with the even spookier sounds of the familiar. Beep-beep goes the VCR. This is one piece of _software_ that passes JGH’s goosebump test.

If you liked Spalding Grey’s performance-a-log *Swimming to Cambodia*, you’ll like The Ugly One with the Jewels. For that matter, if you’re a George Carlin fan with an open mind, you’ll get off on it. Once you strip away the digital sound-effects and Anderson’s slightly detached demeanor, these stories stand on their own, pulled along with real characters and real narrative—even if they end without morals.

When you hear Anderson talk about her dying grandmother’s crisis of faith when she can’t decide if she should wear a hat to the hereafter, it’s hard to know whether to laugh or cry. So you just do a little of both. Andy Kaufman, the subject of one of the stories, would’ve loved it.

In one way or another, the stories are all about culture clash, but Anderson doesn’t play it for cheap laughs. It’s no less strange for her to put clear plastic discs in her eyes than it is for the members of the Mayan tribe to put their contact lenses on and smoke clear cigarettes, so valuable that they had to be carefully hidden.

Even if you’re skeptical about the music, buy these—especially *Bright Red*—as demo discs. The soundstage may be artificial, but it’s more convincing than any virtual-reality ride I’ve been on. Instruments appearing outside the edges of my speakers and behind my rear wall. Anderson’s voice is close-miked, the percussion is both palatable and a real test of your system’s mid bass dynamics, and the synths and guitars provide a backdrop of sound—real aural wallpaper, if you will. The sound is creepy-good.

Don’t be scared off by Anderson’s avant-garde trappings—you don’t need a note from Karen Finley to get in. As for Laurie, maybe she can land a guest spot on Married…With Children.

—Allen St. John

**Belly: King**
Sire 45933-2 (CD). Glyn Johns, prod.; Jack Joseph Puig, eng. AAD. TT: 45:02

**Throwing Muses: University**

Notes on an idea for a treatment for a sitcom pilot: Two teenage girls, best friends, inseparable, as close as Big Sister and Little Sister. They hang together so much that her Mom and her Dad (or was it the other way around?) start dating, get married, and they really do become Sisters. (Note: Get Dean Jones to play the fathers.)

Big Sister and Little Sister start a band and get a recording contract and rave reviews in Option. Little Sister (she’s the cute one) feels smothered, so—after a brief fling with another mostly girl band—she starts her own group. Mom and Dad get divorced.

Meanwhile, Big Sister gets a brain tumor, but gets better. Little Sister’s band ends up on the cover of Rolling Stone. Big Sister gets married, hangs with Michael Stipe, and sells enough records to pay the mortgage on the farmhouse. And they all live happily ever after.

Back to real life. In this evening’s performance, Big Sister will be played by Kristen Hersh of Throwing Muses, while Tanya Donnelly of Belly will play Little Sister. And although they play different sides of the street—Belly has cachet with hip 15-year-olds, Throwing Muses enjoys the Alternative Elder Statesman mantle—there’s a distinct, um, family resemblance between these two albums.

Both University and King project a strong pop sensibility. Although they probably wouldn’t admit it now, Hersh and Don-

Laurie Anderson has two new albums out. Allen St. John reviews them.
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Wes Phillips, Stereophile, Vol. 18, No. 4, April 1995

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World Radio History
Stereophile, September 1995
nely probably both wore out their copies of the Bangles’ All Over the Place. The thing is, while Kristen was listening to the Velvet Underground, Tanya snuck off for a fix of Katrina and the Waves.

The result is that, even though Hersh has an even greater gift for melody than her Hot Property ex-step, she steadfastly refuses to do the rhythm thing. There’s no speed control on her metronome. So it’s Domnelly’s willingness to bounce between ballads and rockers, coupled with her more compliant voice, that’s sold about a billion Belly records. But it’s horses for courses—the Belly album is for the drive to the beach, Throwing Muses for the late-night slog back home.

Both albums also include lyric sheets, so I can say with full critical assurance that I don’t have the slightest idea what any of these words mean. “I don’t like you, but you’re my only hope / I’m not talking that’s the radio / Look at me I melt snow!”

But the B-side opener in “Fever Fever,” “Low hangs the moon inside this room / So that I’m a witness when you Judas my heart,” counters the Cute One. Whether it’s poetry or a Noam Chomsky linguistics experiment is in the ear of the beholder.

The sound on both of these records is the track with a single instrument; but once the song proper starts, there’s not much white space. University is a little more straightforward sonically—you can tell the guitars from the synths, but neither cuts it as a reference disc.

The music’s a different story. Even if the networks don’t pick up the sitcom idea, if you’re in the mood for some pure pop ’90s style, give Kristen and Tanya a spin.

—Allen St. John

CHRIS ISAAK: Forever Blue

Reprise 45845-2 (CD only). Erik Jacobsen, prod; Mark Needham, eng. AAD. TT: 40:00

Chris Isaak’s only ever done one thing—loss—but he sure does it well. In fact, Forever Blue just might be his best record yet—just as San Francisco Day was two years ago. Isaak’s talent for accessing that crooning, lonely, blue place—timeless, archetypal, and heartfelt if you’re a believer; trite, soppy, and hopelessly romantic if you’re not—works so well probably because it’s the real thing. As Isaak himself says, he is a hopeless romantic.

His singing is still a gin-clear distillation of the best of Roy Orbison, early Elvis, the Everlys, Tim Buckley, Jesse Colin Young, even Jim Morrison at his most haunting, with a side trip to John Lee Hooker via George Thorogood (“Baby Did a Bad Bad Thing”). To Isaak’s credit, all of these proudly worn influences mesh perfectly.

But these days he takes more chances in his singing. “Go Walking Down There” constitutes as close to a yowl of existential Sartrean nausea as someone spending his life attempting to escape the ghost of Roy Orbison is likely to get: listen to Isaak shout “Look at all you lucky people / think of all the things you do / Look at all you happy people / Wish I could be like you.” It’s every lonely kid who ever loved and lost—or never even had a chance to win—trying to get it through his/her acned skull that the worst has already happened and there’s nothing to be done about it.

In this vein, the songs themselves are as perfectly simple—or as simply perfect—as anything Isaak’s done in the past; they’re little masterpieces of popcraft. The tide song sounds like a ballad Elvis might have recorded for his first RCA album—the follow-up to “Love Me Tender,” maybe—with lines delivered so quietly, so unaffectedly, that they sneak in the back door and echo around the house for days: “No reason left for living, still there’s a lot to do.” Didn’t the Dalai Lama say that? Whatever, half the time these songs sound so classic that I keep suspecting Isaak’s stumbled on a cache of long-lost Felice and Boudleau Bryant tunes. The other half of the time they go down so easily I can’t believe anything’s happening at all.

With lines like “Return the love you took from me,” Isaak makes it all sound so timelessly simple because, in his world, it is: his girlfriend leaves him, or he leaves her; and there’s never an explanation—just the endless pain of loss. But the almost total absense of thought in Isaak’s songs—no hint of exhaustive Joni Mitchell/Paul Simon/Bob Dylan analysis here, let alone PJ Harvey’s grim half-gainers into the psychosexual abyss—does not diminish them at all. Instead, Isaak’s perfect balance of the general and the poignantly evocative becomes, in effect, a soundtrack for the listener’s own emotional drama—and ideal for emotional catharsis. There’s a thin line between the simplistic and the universal; Isaak erases it.

Forever Blue is Isaak’s fifth album, and his first without longtime lead guitarist James Calvin Wilsey; but his trademark sound seems not to have changed or suffered at all. (Isaak now plays lead himself.) Still lots of reverb and tremolo, but the basic sound, whether acoustic or electric (the album is half’n’half), is refreshingly clean and spacious, without harshness, and Isaak’s minimal arrangements always sound classically right. Recommended, for ex-lovers only.

—Richard Lehneert

MICHAEL JACKSON: History

Epic E2K 59000 (2 gold CDs), E3 59000 (3 LPs). Michael Jackson, Quincy Jones, Bill Bottrell, Teddy Riley, Jimmy Jam, Terry Lewis, Dalllas Austin, R. Kelly, David Foster, Bruce Swedien, Rene, prods.; many, many engs. TT: 2:28:49

Who’s bad? When it comes to pop music, Michael Jackson is hard to ignore. Who had more power? Elvis? The Beatles? Consider this: Mike married E’s daughter, and he owns the publishing rights to the Beatles songs. When you also consider his 25-year reign on the pop charts, calling him the “King of Pop” begins to look like simple fact rather than marketing hyperbole.

This collection, originally conceived as a greatest-hits album, is really two releases: a greatest-hits compilation and an album of new material. The hits have been digitally remastered and sound better than ever. It’s no exaggeration to state that some of these songs, especially those from Off the Wall and Thriller, have been so radically improved as to almost sound like new material. The gold CDs are consistently hotter and more dynamic than the vinyl, but, no surprise, the vinyl gets the edge in soundstaging and warmth.

The three—LP box has the full-sized booklet, however, and it’s really something. Its 52 pages of glossy, color photos and details are enough to satisfy the most rabid MJ fan. The CD booklet is a shrunk imitation.

Not there much to complain of as to song selection on the hits disc (CD 1, LP sides 1–3). The essential solo material (“Billie Jean,” “Beat It,” “Rock With You,” etc.) is all there, and the pace is excellent. Regardless of what you think about his material, the KOP is definitely the most meticulous craftsman in the business. These songs are like highly polished gems—accessible and aimed at the mainstream, but loaded with creativity and sparkle.

The new material (CD 2, LP sides 4–6) offers MJ’s response to all the recent turmoil in his personal life. Though it sounds wounded and defensive, his artistry carries most of the material with his usual spirit and style. “Scream,” his hit duet with sister Janet, is pointed and edgy; the controversial “They Don’t Care About Us” (which Jackson agreed to re-record to excise offensive, allegedly anti-Semitic lyrics) is urgent and compelling; and the funky, hip-hop–laden “This Time Around” shows that Mike means business.

“Stop fuckin’ with me,” Jackson warns in “Scream.” In “This Time Around” he snarls,
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"I'm takin' no shit." The message is clear: the tabloids, extortion attempts, and media hounds have got the KOP seriously agitated.

Elsewhere, "Stranger In Moscow" is a fine slice of modern pop with moody, lonesome lyrics and a great mix, while the version of Charlie Chaplin's "Smile" is utterly charming. The perfect closer for the album, "Smile" is neither maudlin nor overstated, offering just the right combination of determination and melancholy.

Pop music like this is not intended to be art for the ages, or expected to reveal great truths or insights. At its best, it's entertaining, has an infectious beat, and actually says something. Michael Jackson does that better than almost anyone. Does that make him the King? According to HiStory, it does.

—Carl Baugher

MALCOLM MCLAREN: Paris

Nol Gee/Street 314524 107 2A (2 CIs); Lee Gorman, Malcolm McLaren, Robin Miller, prod.; Lee Gorman, eng.; Steve Barney Chase, mix. TT: 10:638

Ever since this Eraser-headed, narcissistic, self-appointed Scots answer to James Bond leapt into the intersection of art, fashion, and commerce as resolutely as, er, "painter" Julian Schnabel (recently spotted in New York's SoHo doing up in black and beret, releasing an album with the aim of "doing for New York what Lou Reed did for Berlin"), he's been a right little backstage-money-machine, first as a manager, now center stage.

Egoiste. In Paris, McLaren, like Schnabel, stands revealed as essentially worthless as a performing artist: His "vocal work" is spoken word, and in also trying to do Lou Reed doing Berlin (is this a trend?), he comes across like William Burroughs with a lisp and an adnoid problem. As usual, McLaren's debt to his side people—here, a French studio quartet who can and do successfully emulate Art Blakey, Eric Satie, Sting, Juliette Greco, and Serge Gainsbourg's Eurotrash pop track simulating three minutes of modulated erotic breathing in what's essentially a place-specific sound collage—is the one he owes to everyone he's staged or managed or promoted (The New York Dolls, Adam Ant, the "succes du scandale" Bow Wow Wow, the Sex Pistols): they do the heavy lifting, he takes the bow. Typically, guest artists such as Catherine Deneuve, another non-singer, take star turns.

In sum, Paris crystallizes out to no more than a nicely crafted example of commercial music: an artificial construct, not stylish but stylized; a marketable concept; a soundtrack, not art.

On the other hand, today's High Priests of Art are MBAs, and McLaren wrote that book by hand. Coupling niche marketing with Rupert Murdoch's classic dictum ("Sex sells"), he moved ziplibly, you might say, from moving sexy clothes (his Kings Road boutique "Sex" was London's early mass-market purveyor of bondage trousers and Vivienne Westwood gear) to marketing sexual confusion (Adam Ant, the New Romantic movement, Derek Jarman, under-age Burmese chanteuses) and, most visibly, sex-and-Attitude (The Sex Pistols).

So it's no surprise that he looks at City of Light, which the rest of the world views as a city of lovers pretty much personified in the classic snap "Le Baiser," as the City of Sex. Men sex, no less. ("Seeing those short hairs so close / And smelling the stale odor of scent and sweat... / I was overcome with desire," he grows in the opening track. "Love is just a drag," he concludes.) Along the same lines, his view of jazz and early 20th-century classical music (the professed concept behind the concept) holds as much water as Kato Kaelin—but hey, like that's okay. All those innocents abroad who buy Victor/Victoria's James Garner and Julie Andrews as the apotheosis of "Le Jazz Hot" (Gay Paree as Vegas, essentially, headlined by Madonna minus pasties) will buy Paris by the bucket. The tourist trade and the newly Common Market: maybe that's why newly elected neo-French president Jacques Chirac signed up McLaren to pen his campaign theme song.

In the face of such marketing nouvelle, thank God the pickup band had a mind of its own—like ace studio musicians stuck on commercial gigs around the world—and stuck in all the licks worth a listen. You can hear the good stuff: jazz trumpet, keyboard development in the style of Debussy, Afro-Cuban rhythm, a cheeky quote from Sting—on the nine-track instrumental mix CD that comes with the US release.

—Beth Jacques

Van Morrison's affable new album (his 25th) is called Days Like This. Less is more, Van. Maybe Van Morrison should take two years between albums instead of cranking out his usual annual biscuit. Fat pared off, last year's two-CD A Night in San Fran-
AARON NEVILLE: The Tattooed Heart
A&M 31454 0349 2 (CD). Steve Lindsey, Keith Stegall, prods.; Gabe Veltri, eng. AAD. TT: 54:45

Folks who’ve come by The Big Easy’s Aaron Neville recently will most likely recognize his delicate, modulated tenor only as the voice behind a whole bunch of big-ticket car commercials, the Northwest Airlines campaign, “Some People Know How to Fly,” and a 1993 Christmas TV spectacular with fellow New Orleans Big Kahuna, gun-toting’ vocalist, and nouveau swing-band leader Harry Connick, Jr.—easily 25 years his junior.

With the exception of the Dennis Linde–pered power R&B track “Down into Muddy Water,” which rocks out like Moon Martin’s classic “Bad Case of Loving You,” the first two-thirds of The Tattooed Heart are really more of the same: easy-to-take, easy-listenin’ “smooth” music from the pens and production of half of California’s 70s-era studio musicians and pro songwriters: Andrew Gold, Waddy Wachtel (on guitar on “Try (A Little Harder!),” Greg Prestopino, and 90s revisionist Framine Gold. Going down like a pitcher of Bailey’s and cream, NC-17-rated and smoothely executed romantic ballads and yearning torch songs such as “Can’t Stop My Heart from Loving You” and “Beautiful Night” easily establish Neville as the 90s incarnation of Johnny Mathis or Nat King Cole—a must at prom time and all through the summer makeout season.

Persevere to the bitter end, however, and you’ll discover Neville making good on the early promise of “Muddy Water”: complex, good-time tunes like Bill Withers’ “Use Me,” packed with cross-rhythms, energy, and harmonized vocal fireworks, courtesy of three of his Neville Brothers Band-mates (Art, Cyril, and Charles). Naturally enough, most of these tracks were cut at Nashville’s meaty Sound Stage Studio, with a whole different boatload of sinewy session players who sound, in contrast to the proficient CD101-Lite of many of the earlier tracks, like they’re enjoying the hell out of what they’re doing.

Critically acclaimed but popularly adulated pretty much only for his 1966 solo, Tell It Like It Is, A&M is obviously playing Aaron Neville’s The Tattooed Heart real safe. Most of the release takes dead aim at the crossover market, a few tracks spring from the classic Neville Brothers style, and the absolute best track—like finding a Fabergé egg in a bunch of this—and-that at a flea market—is saved for last: “Crying in the Chapel,” which couples a simple solo vocal with subtle arrangement and flawless production.

—Beth Jacques

PINK FLOYD: p.u.l.s.e
Columbia C2K 67065 (2 CDs). David Gilmour, prod.; James Guthrie, prod., eng. AAD? TT: 227:53

Pink Floyd are just about the best at making the most out of 20-some-years-old songs while raking in a ton of money and still managing to have fun, p.u.l.s.e, their latest live release, proves that the Floyd have lost nothing musically over the years. It also doesn’t hurt (though it could have) that the four-member 70s outfit (less Roger Waters) has grown for this album to an entourage of 11 musicians and singers (including the remaining three original members).

Disc one is a mix of the old (“Astronomy Domine”), the new (“What Do You Want from Me”), and the middle-aged Floyd (“Shine On, You Crazy Diamond,” “Hey You”). It ends with an unspired token version of “Another Brick in the Wall (Part Two),” from Roger Waters’ autobiographical epic, The Wall—listenable but not outstanding.

Disc two is the real treat, and alone is worth the price of the whole set: the complete, live Dark Side of the Moon will take you back (if you’re old enough) to the days of marathon outdoor concerts, tie-dyed shirts, and other items better left unmentioned here. At the end of “Eclipse,” Gilmour says, “Takes you back, doesn’t it?” I’m not sure if he’s talking to the audience as much as he is to himself—I think it’s safe to say the majority of the crowd was still in diapers when Dark Side was first released. Encores include a great sing-along version of “Wish You Were Here” (I wonder whether a nostalgic Gilmour is singing this song to Roger Waters or to founding member Sid Barrett, to whom the song was originally written) and a slow, almost druggy version of the perennial crowd pleaser, “Comfortably Numb.”

Longtime Pink Floyd album designer Storm Thorgerson’s packaging concept for p.u.l.s.e is top-dog. The two CDs are enclosed within the covers of a hard-bound book filled with concert photos and credits, the book in turn enclosed in a sturdy slipcase no thicker than a regular two-disc box. What makes the packaging unique is the little red LED in the box’s spine that pulses (so to speak) continuously (or at least until the batteries run down)—still waiting for that to happen. People (like me) who live with jewelboxes strewed about the floor will find that LED really handy. If you’re one of those people who insist on storing CDs on a shelf or in a cabinet, this package could present some problems: to make room for the two AA batteries, the box was made larger than a standard CD jewelbox by 1/4 all the way around.

We’ve heard these songs before, and we’ll probably continue to hear them long after the band has disbanded for good, but for first-generation Floydoids and Floydys-come-lately alike, p.u.l.s.e is a must-have.

—Steve Stoner

PRIMUS: Tales from the Punchbowl
Interscope 92553-1 (2 LPs), -2 (CD). Primus, prods.; Primus, Tim Solyan, engs. TT: 54:08

Always mindful of the power of self-deprecation and negative marketing (f Zappa’s “No Commercial Potential” campaign), Primus adopted “Primsuck” early on as a catchphrase. Don’t believe it. This is one of the most talented, technically accomplished groups in popular music. True, they’ve always offered a sense of willful perversion and intentional clownishness—especially in Claypool’s lyrics and imagery. But the real achievement of Primus is more basic: they’re endlessly entertaining, and never more so than on this new album.

It’s impossible to confuse Primus with any other rock band. Their lurching, rhythmic right angles often suggest an updated version of Captain Beefheart’s Magic Band. Jerking along like a wagon with a flat-edged wheel, Primus is buoyed by Claypool’s poppin’, slapping bass. He drives the music with skill, invention, and an almost manic sense of energy. But this trio is no one-man show. They play as if with one mind, resembling a three-head ed sea serpent in both concept and execution. (The sea and sailing are recurring Primus themes.) What’s most impressive, however, is that these guys are playing some seriously difficult music. Judging by their exuberance, they’re also having a helluva good time doing it.

More adventurous than Pork Soda, with more range and depth, Punchbowl is not for the traditional rock n’ roll kid. Casual Primus fans may find this one a little out there, but serious aficionados should have no trouble taking to it. Larry Lalonde
Primus sucks, according to Primus, but Tales from the Punchbowl is their best yet. From left: Tim Alexander, Larry Lalonde, Les Claypool.

enjoys an expanded role here as he continues to grow as a guitarist. In fact, one of the few complaints I have of this album is that “Southbound Pachyderm” fades out on his guitar solo.

Lyrically, Primus's world is one of big brown beavers, flying elephants, and adolescent jokes that will leave you cackling or clucking. The words can easily be set aside, however, in lieu of the music, which is complex, rhythmically challenging, and tricky as hell. Try playing “Year of the Parrot” with your garage band, boys'n'girls. Sonically, the LP thunders compared to the CD, but the CD booklet has all the lyrics, which are almost impossible to make out otherwise.

But if you can appreciate Primus's technical accomplishments and also happen to have a taste for the offbeat and bizarre, you may be ready for Tales from the Punchbowl. If not, don’t sweat it. Primus sucks.

—Carl Baugher

WILCO: A.M.

Wilco, a quartet derived from the suddenly defunct Uncle Tupelo, make ingratiating, at times intoxicating, country rock. Band leader Jeff Tweedy has a knack for simple melodies and enticing hooks. Many of these tunes lack only the heavy-rotation exposure that good, old-fashioned Payola used to provide. Perhaps this explains the album’s title, though I suspect it has more to do with A.M. standing for the dawning of a new day.

The bulk of the performances here get under your skin one way or another. Try the neo-Young/Crazy Horse power-chorder “Shouldn't Be Ashamed,” the banjo-driven breakdown of “That's Not the Issue,” or the stutter-stepping “Too Far Apart,” though they could have forgone the shameless remake of “Honky Tonk Woman” (“Casino Queen”) and the tribute-to-Roger-McGuinn vocal on “It's Just That Simple” that winds up sounding more like Mike Love. Then again, you're not likely to mistake Tweedy the lyricist for Hank Williams, let alone Erskine Caldwell.

What separates Wilco from Uncle Tupelo is emphasis. Jay Farrar, Tweedy's U.T. song-writing partner, brought country veneer to the marriage, while Tweedy supplied the rock. A.M. is less refined than Tupelo's 1993 major-label debut/swan song, Anodyne. The vocals are grittier, the backbeat punchier, the overall sound looser and more spontaneous. The recording is reasonably detailed, too—you can pick out every note the three and sometimes four guitars are playing, as well as the occasional phased whoosh and stereo gimmickry.

In all, you can easily find yourself swaying to the songs on A.M. Just don’t expect the earth to shake.

—David Prince
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Balanced audio technology at Hi-Fi '95

Editor:

I would like Stereophile’s readers to note the unfortunate omission of Balanced Audio Technology as an Exhibitor in the recent Best Sound at the Show published results [August '95, p.127]. Balanced Audio Technology’s room received the third highest numerical score in the visitors’ balloting. With Ambrosia Audio and Video’s support, we were able to assemble a $25,000 system—centered around the Balanced Audio Technology VK-5 preamplifier and the VK-60 power amplifiers—that more than held its own with the Show’s “cost-no-object” systems.

This positive reception by Hi-Fi ‘95 attendees, combined with many accolades for Best Sound at the Show at the Winter CES (see the April ’95 Stereophile, for example), certainly substantiates Balanced Audio Technology’s growing pre-eminence in the field of high-end audio. Thanks for the opportunity to make this correction, and to Maura Rieland and the entire staff at Stereophile for putting on a superb Show.

Steve Bednarski
Balanced Audio Technology

Infinity composition Prelude

Editor:

Thank you for taking the time to so thoroughly investigate our newest loudspeakers. We were very pleased that Bob chose to review the Composition Prelude Full Range loudspeaker system as an audio product in addition to his review for the new Stereophile Guide to Home Theater. Our intent was to create a loudspeaker that was musically satisfying and could handle the rigorous demands of reproducing film soundtracks without compromise in its ability to handle either task.

Since Infinity loudspeakers first began to be incorporated into Home Theater systems, we have always maintained that if a loudspeaker was designed properly, it should be able to reproduce both music and film soundtracks with equal proficiency. When we began the Compositions project, our strategy was to create a loudspeaker system that could accomplish this goal better than any product in our line. Extensive market research showed us that, visually, the loudspeakers should blend into their environment when placed next to a television in a Home Theater system, yet have an unparalleled appearance when used on their own as the centerpiece of a listening room. Not an easy challenge.

The design targets were extremely high sensitivity, extremely wide bandwidth, simple installation, and exquisite appearance—all without breaking the bank. This would allow for a loudspeaker system that would be compatible with a wide range of associated components and be able to reproduce the subtleties of music and the demands of film soundtracks with equal dexterity. Our intent was that this system be ready for new formats as well, such as 5.1 digital systems, without going back to the drawing board. As Bob discovered in his review, accomplishing this objective required pushing the envelope of conventional wisdom in loudspeaker design.

Regarding Bob's reservation regarding the opportunities for Stereophile readers to receive a demonstration under ideal conditions, please let us assure your readers that the Composition Series is sold only by highly qualified Infinity retailers who are thoroughly trained by Infinity personnel. Although we do manufacture a wide range of products that are sold through a wide range of retailers, products like our HKS Series and Composition Series are reserved for a select group of Infinity retailers who are skilled at presenting our premium products.

And by the way, Bob, enjoy them. I did the same thing. After living with the same loudspeakers in my home since 1979, I finally replaced them recently with a complete Compositions system. My wife, who loves music and cinema as much as I do, is delighted. I finally achieved Wife Acceptance Factor (WAF) in my system without sacrifice—Mitch Witten VP, Product Development, Infinity Systems

Audio Physic Virgo

Editor:

Thank you, Michael Fremer and John Atkinson, for such an entertaining and thorough review. It is Audio Physic’s goal to make the most musical audio products possible, and we feel that science is a tool to use toward this goal. This type of review, where measurements explain listening impressions, not only confirms our efforts, but is also most informative for your readers.

Thank you also for reporting your success with Audio Physic’s speaker-placement method. As MF explains, this technique embodies years of research of room acoustics and human hearing. We believe that critical speaker placement can yield even greater benefits than is commonly believed, and we hope your description will inspire audiophiles to experiment. Incidentally, all Audio Physic dealers have been trained in this method of speaker placement.

Very soon an Eprom for the Virgo will be ready for the LISA DSP [reviewed in Stereophile, Vol.17 No.11, p.169], which operates between CD transport and D/A converter. This will offer frequency and phase response for the Virgo when played with a digital source.

Joachim Gerhard Allen Perkins President, Audio Physic Owner, Inimedia

Cary audio design CAD-300SEI

Editor:

I am honored, and must admit that I have a smile on my face, as you folks allow me the opportunity to share my views on the Cary CAD-300SEI integrated amplifier review. The joy of reading about one of my single-ended audio designs goes beyond the product itself. The true celebration of the review is the public praise and glory of the musical experience revealed by the man who recently wrote the book on high-end audio: Mr. Robert Harley.

I had viewed Bob as an exacting, visionary engineer with an eye and ear for the technical digital domain. I was also aware that Bob was skeptical of single-ended triode amplifiers—low power, much less than straight-line–flat test-equipment specs, and old technology. I mean, if a Cary single-ended amp was going to have an inescapable day in court, this was the guy (RH) to convert, to issue a decided verdict. As I read Robert’s words in the earlier pages of the review, I knew for a fact that he, like so many other critics, had never experienced a Cary single-
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5 Cups PARAGON Jubilee time coherent reference mini-monitor speakers.
2 Tbs. KINERGETICS SW-800 subwoofer towers with computerized crossover.
2 Lbs. MUSICAL DESIGN D-75 Class A cascode driver 75 watt amplifiers.
1 Lb. PARASOUND HCA-2200 II 250 watt ultra high current amplifier.
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Aunt Matty created this delicious dish using only the finest of ingredients. She relied on tried and true high end audio principles rather than those artificial surround sound guidelines everybody else uses. If you're in the neighborhood, please do give us a call. We think you'll be mighty pleased.

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ended amplifier. When Bob states that “the 300SEI communicated the music in a way I’d never experienced before,” I knew we had another convert to the glorious musical experience provided by triode single-ended amps. Now, if only I could get John Atkinson to spend a bit of time listening to high-fidelity products Cary style…[I am about to spend a weekend with the 300SEI as this issue goes to press.—Ed.]

Well, enough of my smiles and formalities: I would like to address the topic of compatible loudspeakers with low-power triode single-ended amplifiers. Real-world loudspeakers! Not some 10' high by 4' wide, 500 lb, 1954-vintage theater horn-loaded, ear-blederic relic that is sure to cause either hearing loss or a divorce. I have over 38 years of experience listening to single-ended amplifiers with conventional cone loudspeakers. I have a vast resource of related speaker experiences from the literally thousands of Cary Audio single-ended-amplifier owners all over the world.

First, a list of compatible loudspeaker brand names that I have personally used with low-powered, single-ended amps over the last 10 years: ProAc, Monitor Audio, Rogers, B&W, Infinity, KEF, Spica, Rosinante, AR, Shahinian Acoustics, Snell, Swans Baton, Audio Vector, Audio Artistry, Tannoy, Vandersteen 1B, Chapman Sound, Klipsch, Celestion.


Many of these speaker brands have some of the same attributes. There are speakers in their lines that are stated as 8 ohm loudspeakers in the specs, when in reality many of the models are actually 10, 11, and even 12 ohms load over a great portion of the spectrum. It is not as critical a fact what the spl rating is on a loudspeaker as it is the actual operating impedance. A loudspeaker with an actual operating impedance of from two to three times the output impedance of the single-ended amplifier has been found to yield the most favorable results.

On the topic of loudspeakers, I find Robert Harley’s listening results with the Infinity Composition Prelude not too dissimilar from the results I have been experiencing over the last few months using a dedicated self-powered subwoofer. My system at home is the following: The CAD-300SEI driving a pair of ProAc Response One S full-ranges on 24” stands spaced 8’ apart and about 12’ from the listening position, and spaced out 3’ from the rear walls. The 300SEI has the optional subwoofer line-level-out jacks connected to a “home-brew” 120W self-powered solid-state single subwoofer with an electronic crossover tuned for 60Hz. The sub is a single unit with a mixer summing circuit for each channel. I have the sub off to the side, firing across the soundstage.

The advantages of this system are a beautiful midrange bloom, ultrahigh frequency extension, and incredible imaging not possible with floorstanding speakers, along with a true, realistic bass that does not pull on the 11W output of the SEI. I find that the simplistic two-way monitor design is the most friendly to single-ended tube audio amplifiers. I have also found that it is a rarity to have both realistic imaging, blooming midis, and extension along with true 20–30Hz bass in one loudspeaker. We all know the laws of physics—a thin, 7"-or-less-wide loudspeaker with 5" or 6" drivers cannot produce true, concert-hall bottom end.

In my opinion, the best of both worlds is a blend of the best of each technology: single-ended triode, zero-feedback amplifiers for the audio range of 60Hz–20kHz; and a dedicated, solid-state, high-current amplifier with an electronic crossover to cover the range of 14Hz–60Hz.

In the above example of my personal audio system, please note that I am running the 300SEI full range to the ProAcs. Do not attempt to limit the range of the main amplifier. The monitor speakers will not produce the lower frequencies anyway, so why attempt to eliminate them and spoil the phase integrity of the presentation?

Another fact of reality with low-power single-ended amps driving monitor loudspeakers is, if the amp does clip on the extreme low frequencies, the monitors will not reveal the dipped low-frequency distortion. This is easily revealed if one takes a storage freeze-frame 'scope and monitors at the speaker posts of the monitor-size loudspeakers. You can turn up the volume and observe clipping of the low-frequency waveform and store the pattern on the ‘scope; but your ear did not have a clue, because the speaker did not play the low frequencies. At the same time, many of the small drivers used in a two-way monitor system go up to 20 or even 30 octaves of the extreme low frequencies. At 20–30 ohms, the amp is just swinging voltage.

"Why bother?” you ask; read what Robert Harley has to say about the realistic beauty of the music presented with the CAD-300SEI running the spectrum above the current-hungry bass notes. In my opinion, the low-powered single-ended amplifier is unsurpassed in the realistic, non-fatiguing presentation of recorded music in the all-important midrange and higher octaves. The high-power, solid-state current welder is the guy for the bass below 60Hz.

Well, I’m sure I’ve used up my allotted space for my Manufacturer’s Comment. In closing, I would like once again to thank Stereophile and Robert Harley for the integrity of their equipment reviews. Also, my gratitude for the opportunity afforded me to give a few of my views on triode single-ended tube amplification. Oh, one more item of interest: I can go on with my views and opinions as long as there is music to be enjoyed.

DENNIS J. HAD
President, Cary Audio Design

**AUDI ALCHEMY: VAC-IN-THE-BOX**

Editor:
Thank you for the review of our VAC-in-the-BOX (VITB) phono preamplifier. Like Wes Phillips and Lonnie Brownell in the August issue, we are happy Steven Stone has had the opportunity to look at another one of the members of our line of analog products; they are often hidden from the limelight due to the popularity of our well-known DACs and jitter-reduction devices.

The VITB was conceived as a product to solve a specific problem: that of the phono preamplifier disappearing from low-to-mid- (and sometimes high-) priced preamps, receivers, and integrated amps. Even our own DLC preamp omits one! However, with the increase in popularity of vinyl, we recognized the need to provide phono capability for those cherished discs. Our goal for the VITB, like that of its namesake DITB (DAC-in-the-Box), was to provide the least expensive high-performance, full-featured product available—a goal that Steve and John Atkinson affirm we have achieved when they call the VITB a “wonderful starter,” “a giant step forward in entry-level phono gear,” and “a lot of performance at a very affordable price.”

Users will be happy to note that tightened Audio Precision testing standards were put in place during the first production run, which ensure even closer adherence to the RIAA standard.

In conclusion, thanks for the wonderful review.

PETER MANDICK
Vice President, Audio Alchemy

**GOLD AERO DB45**

Editor:
We would like to thank Stereophile and Steven Stone for their time, effort, and favorable comments concerning the Gold Aero DB45 Signature.

In the review we found three items that we feel require clarification and comment.

1) **Output Impedance:** Mr. Atkinson is correct in his observation of the varying output impedance, but this is not due to his suspected cause of undersized coupling capacitors. The DB45 does not have any coupling capacitors, as it is a DC-coupled circuit.

Gold Aero recommends using the DB45

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*Stereophile, September 1995*
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2) Grounding: Mr. Atkinson comments that the noise and hum levels are sensitive to grounding. Specifically, he states that the dB45 did not perform well with a floating source. In a typical system, the output from the phono cartridge is floating; therefore, the dB45 is designed to accommodate a floating source. We have not had any problems with the connections in a typical listening environment. We have, however, found that, when the dB45 is connected to test equipment, there is a possibility of a ground loop, due to most test equipment having a ground that is common to both the source and the load (preamp). Since this is not the real-world usage of any phono preamp, we do not feel it is of any concern in respect to the design or application of such a device.

3) RIAA accuracy: RIAA specifications for the correct pre-emphasis and subsequent de-emphasis of a disc recording are only specified from 20Hz to 20kHz. Therefore, the equalization beyond that bandwidth should not be included in any evaluation of equipment where accuracy is concerned. Even if you do calculate the RIAA time constants out to infinity, the dB45 matches within 1dB until 80kHz. Beyond 80kHz, the frequency response does rise. This is caused by the amplifier reaching unity gain, as mentioned by Mr. Atkinson, coupled with the high bandwidth product of our amplifier design.

Again, we would like to thank everyone involved for the wonderful review.

Frank Morris
President
Gold Acro

Audio Alchemy DTI v2.0

Editor: We at Audio Alchemy sincerely appreciate Robert Harley's review of our DTI v2.0. We believe that this, our third-generation jitter-reduction product (DTI, DTI-Pro, DTI v2.0), displays the products of our research into what makes digital audio sound better.

As was alluded to in the DDE v3.0 review in the last issue, and as is confirmed in this review, via an ideal interface (PS), DTI v2.0 can raise the performance of the v3.0 several notches. Via S/PDIF, the v2.0 makes an audible performance improvement on virtually all of the transports and DACs Bob paired it with. Though his listening-test results may not have corresponded in every case with the measurements, they are consistent with ours. The DTI v2.0, DTI-Pro, and DTI-Pro 32 all reduce jitter over a very wide bandwidth. An absolute number just doesn't tell you enough about how the product will perform, nor does looking at a spectral-response curve with a 20kHz cutoff. Our wide-band suppression techniques and the non-music-related nature of the residual jitter help ensure that performance improvements are enjoyed in almost everyone's system. (By the way, ST-type optical input is available for the DTI v2.0 as a $179 option.)

Again, thanks for the great review, and keep up the good job of informing your readers about this highly complex, but critical, subject of jitter.

Peter Madnick
Vice President, Audio Alchemy

XLO Signature Series

Editor: Thanks to Stereophile and Jonathan Scull for making September 1995 your XLO issue! Not only are we grateful to Jonathan for all of the very fine things he had to say about our cables, but we're also tremendously complimented that Stereophile was willing to devote so many of its pages to not just reviewing our products, but to publishing Jonathan's interview with me, as well.

I have only two very small nits to pick:

When Jonathan, in his review of our cables, comments that they sound different with different equipment, it could seem that he's downplaying the fact that that's what they're supposed to do. Every product of every kind has its own particular sonic signature, and a cable that didn't let you hear it wouldn't be much of a cable at all! We're very proud of the fact that our cables sound "hard" on the hard ones, "thin" on the thin ones, and "sweet" on the sweet ones. If they didn't, they couldn't sound as glorious as Jonathan says they do on the truly glorious ones!

The other thing is that, even though I know they were just intended as a gentle "tease," I wonder if Jonathan's little jabs in the interview about me being long-winded should have made it into print. The fact of the matter is that, to someone who doesn't know me as...[NOTE: last 18 pages deleted.—Ed.]

Roger E. Skoff
President, XLO Electric Co.

Michael Yee Audio PFE-I

Editor: I would like to thank Steven Stone and Stereophile magazine for the review of the PFE-I. I feel that we and the product have been treated very fairly, and I agree with Mr. Stone's opinions regarding the sonic characteristics of the PFE-I.

Unfortunately, this review period was a bad time for the PFE-I. Mr. Stone was the first to notice signs of a problem (microphone inputs), which we had not solved until after the third piece was delivered. The problem was a susceptibility to RF interference that is experienced under some conditions (perhaps Audio Precision's signal generation?). In consideration of Mr. Stone's time, we decided to not replace the review unit again after the problem was solved. This RF susceptibility is probably the reason for the bizarre test results. I feel that the unit functioned fine in Mr. Stone's system (as it did in our two test systems here), since problems as serious as the test results indicate would be very audible.

The PFE-I represents many new types of design ideas. The PFE-I accomplishes all of the gain--low-output moving-coil to line-level--in one feedback loop. This eliminates the multiplicative effect of distortions when adding stages of electronics; I believe no other manufacturer attempts this. The open-loop gain is phase-compensated for the active RIAA equalization, which eliminates phase-summing errors--a technique I developed in the late '70s. Of course, techniques were implemented to eliminate imaging distortions.

New ideas always represent some risk, as large amounts of experience cannot be used. We are happy to take some risks at MYA to try to bring more value to "high-end audio," as we feel that we do accomplish this result. Sometimes problems do not show up until years into a product's life (the PFE-1 has been in production since early 1991), as experienced here. We take full responsibility in our risk-taking, as some of our customers can attest to. For PFE-I owners who did not send in their warranty cards (PFE-1s with serial numbers lower than 400), rework to reduce RF susceptibility is offered at no expense.

Michael Yee
Michael Yee Audio

SUMO's Web Site

Editor: I guess we just missed getting our Web site up in time for Jason Chervokas to spot it. You can find us at "http://emporium.turnpike.net/S/sumo/audio.htm" or "http://emporium.turnpike.net/S/sumo/index.html" if you need the full Unix extension. I created the whole thing myself--I don't think there is a better-looking audio site out there.

Also check out "Mike's Favorite Links." There are some great music and sound links there.

Michael Custer
SUMO

Stereophile, September 1995
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I'm a happy guy. Like most people, I like being happy. I just heard from Chris Brower, Executive VP of B&W and President of the Academy for the Advancement of High End Audio, that the Academy Board of Governors has voted to sponsor the two Trade Days we're going to have at Hi-Fi '96 in Manhattan next May (see ad on p.114).

Now, you're probably asking: "What's that got to do with me? I'm sure it makes Archibald's ego even more inflated (pretty hard to do), but it doesn't put any more audio equipment on the table at my house."

True, it doesn't put any more equipment on your table, but it will give you a lot more to see. Most of the exhibitors at our Shows are manufacturers—a good thing, because that's who most of the attendees want to see—and manufacturers are always looking to maximize the return on their exhibit investment dollar.

Although my "Publisher" title describes most of what I do at Stereophile, I'm also one of the driving forces behind our Shows—I'm a Show promoter. As such, I always want to give my customers—attendees and exhibitors alike—the biggest bang for their buck. That's not altruistic—it's just good business: the more benefit you give your customers, the more of them there will be. (Which, in a different arena, is why I assume our circulation ranks at Stereophile have swelled to an audited 75,000 in 1995. Again, it's no direct benefit to you that there are 74,999 others like you rather than 59,999 or 14,999; but the more of you there are, the more we can offer you in the magazine).

Which brings me back to those dollar-maximizing exhibitors: If I (the Show promoter) can offer them a significant trade benefit at the New York Show, to go along with the tremendous benefit of meeting thousands of people like you, then more of them will decide to exhibit. The more they exhibit, the more likely you'll hear something great at the Show, the more likely you'll meet a manufacturer with interesting new ideas, the more likely you'll uncover some gem of a high-end product that has just been thought up by some clever entrepreneur.

In short, everyone benefits. The Academy's participation is important to me because it catapults Hi-Fi '96 from being a Stereophile-only show into an industry-wide event. The Academy, hopefully with the assistance of other trade organizations and magazine groups, will be putting on an extensive series of seminars on the trade days, discussing all the hot trade issues for 1996.

I'm also a member of the Academy's Executive Committee, and their sponsoring Hi-Fi '96 put me in a tough position. As a member of the Executive Committee, my allegiance is to the best interests of the Academy—I had to tell the other members to negotiate hard with any organization whose trade show they might sponsor. But as the promoter of Hi-Fi '96, I was working hard to not give away the store.

In the end, I traded in my Academy hat during the negotiation period, which was made easier by the fact that the decision was made by the Academy's Governors, not the Executive Committee.

Still, I think sponsoring the trade days at Hi-Fi '96 is a great thing for the Academy to be doing. The Academy was launched at the last Show we did in New York back in 1990, but it hasn't yet had the industry-dominating effects that you see from PARA (Professional Audio/Video Retailers Association) and CEDIA (Custom Electronics Design Industry Association). The Academy is the only high-end audio organization that has lasted more than a couple of years, but it hasn't taken the world by storm.

Though the Academy's primary achievements have been behind the scenes, they've been significant. Back when it had just started up, the Academy played a significant role in defeating the luxury tax aimed at electronics costing more than $1000—you know, the now-repealed tax that decimated the boat-building industry. Also, the Academy has had a profound effect on relationships between high-end audio and the Electronic Industries Association—this industry's major trade association. The result has been a dramatic increase in high-end membership at the EIA, much better facilities for high-end at most EIA shows, and overall greater recognition of high end's importance in the world of consumer electronics.

The Show in New York, though, allows the Academy to enter a whole new arena, making possible true industry-wide participation in that Show—including other magazines. With luck, and the enthusiastic participation of our exhibitors, dealers from all over North America and distributors from all over the world will be attending Academy seminars and learning what key high-end people think about all the major issues, finding out from designers and other key industry people what's happening with DVD, Dolby, Coherent Acoustics (the new name for DTS's data-reduction scheme), THX, the new Super-CDs, and much more. And, you'd better believe, Stereophile will be reaping in many of these same industry leaders for the consumer-day seminars as well—even more than we had this last April in Los Angeles.

Which brings up the only problem I can think of related to this change: There's already more to see and hear at our Shows—with the live music, all the terrific exhibits, and the seminars—than any one person can see or hear, and a bigger Show will only be worse in that respect. Although I have to admit that this is a problem I'm willing to live with, I also have a recommendation: Plan Ahead and Plan Early.

Our room block at the Waldorf is only a little bigger than the room block we had at the Doubletree in Los Angeles (which sold out three months in advance), and there's likely to be a lot more competition in New York from members of the trade. Book a room now for Thursday, May 30 through Sunday, June 2; stay at the Waldorf, with every exhibit room, seminar, and live music event only minutes away; spend all 26 hours of the Show searching out the best there is. Everyone at Stereophile, and everyone in the high-end and Home Theater industries, is planning for this to be the best show in the world. You'll want to be there!
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