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- Isophon & Infinity SPEAKERS
- Analog at the 2004 CES

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Hilary Hahn must be a chameleon. At least, that's how it seemed at the 2004 Consumer Electronics Show. On January 11, the gifted 23-year-old violinist accompanied me to nine different rooms, each time with Neville Marriner and the entire Academy of St. Martin-in-the-Fields in tow. Playing Brahms's Violin Concerto, sometimes Ms. Hahn was modestly draped in "Red Book" Standard, other times in Superbly Accessorized Couture Divine. But even when she wore the same outfit from room to room, she and her backup forces created nine distinctly different sonic impressions when they began to strut their ones and zeros.

First, there was the sound of her violin. An 1864 Jean-Baptiste Vuillaume copy of Paganini's "Cannon" Guarneri, aptly named for its huge sound, it glintened and gleamed in some rooms, beautiful silvery sparks of light illuminating its higher reaches. In a few other rooms it was more mono-dimensional, in others so sweet that the sparks blended into one occasionally syrupy whole. One presentation was quite rich in the midrange, but the gleam was not there. In yet another room the violin sounded split in two, its glistening edge seemingly detached from the main, resindladen body of its sound.

The Academy's violin players seemed equal masters of transformation. Through some systems they sounded as if their instruments had been finished in the nectar of the Gods. Through others they sounded more neutral, though hardly less divine. On at least one system, they made me shake my head in disbelief that an ensemble whose strings are so harsh and scrappy could help Ms. Hahn receive a Grammy for her Sony recording of the Brahms and Stravinsky concertos.

At first, I thought it would be easy to determine which systems were most accurate. Though my first opportunity to hear Hahn live comes one month after CES, I have in the last few years heard a number of superb violinists in live performance, among them Vadim Repin, Kyoko Takezawa, Maxim Vengerov, Gil Shaham, David Abel, and Kyung Wha-Chung. I've even heard Murray Perahia play with and conduct the august Academy. Given such experience, one might think I could extrapolate Hahn's true sound with a fair degree of accuracy.

Not so easy. Each of those violinists sounded distinctly different, not only due to different instruments and technique, but also because of where I sat in different venues. The two Bay Area halls in which I most frequently hear orchestral concerts, Davies and Zellerbach, display distinct high-frequency rolloffs as one moves farther back in the orchestra. The damping effect is so significant that, when I recently sat in Row V of Davies, rather than in my usual seats closer up, the sound was so altered that I was unable to compare the sound of the visiting Berlin Philharmonic with that of the familiar San Francisco Symphony. It was easy to talk about differences in interpretation, but did the Berlin's strings and woodwinds actually sound as distinctly different as I thought they did? Divorced from my usual "sweet spot," I could not speak with authority.

Similarly, could I with surety draw definite conclusions about the sound of Hahn and the Academy? I first needed to know something about the space in which they'd been recorded, and how they'd been miked.

So far, I've talked solely about acoustic instruments. What about amplified and processed sound? How many pop and jazz vocalists actually have that breathy, zingy edge to their voices that we often hear on closely miked recordings? Even if some of them do, if one system gives that edge more emphasis than another, which is the more accurate?

Given that amplification in most venues does not even remotely approach the accuracy of audiophile systems, what kind of reality are we after? When it comes to amplified music, are we looking for a home system that is most accurate, or one that is most able to make music out of multitracked artificial reality?

Which brings us back to those CES demo systems. When all was said and done, it was easy to determine that something was way off in the rooms that whitened out the sound, truncated extremes, or rendered the strings abnormally harsh. But the real conundrum arose in two rooms whose sounds were seductively sweet.

Both rooms featured single-ended triode amplification. One, in which I encountered Stereophile's Michael Fremer, offered sound on a much smaller scale than I'm accustomed to. Not everything I'm used to hearing was there, but that system had such a unique way of highlighting changes of emotion—the sometimes subtle pullback of voice and/or instrument that can instantly focus one's attention and touch the heart—that I found myself listening more closely to the music than usual. Even through the "lack of," I found myself captivated by every note.

In the other sweet-sounding room, a well-known producer of audiophile recordings was holding court. Fielding a call on his cell phone shortly after my entrance (until I reminded him that he was not conversing within a vacuum tube and received a free CD by way of apology), he proceeded to send person after person into the room. An investor in the company later claimed that said producer felt that the system made one of his latest CDs sound identical to what he had heard during the recording session.

I doubt it. I've spent many years absorbing the sound of live instruments and voices during performance, and no ensemble has ever seemed as sweet as what I heard in that room. But, "real" or not, there was no denying that the sound was so musically satisfying that I was more than willing to temporarily surrender my allegiance to the real thing in order to fully bathe in the bliss at hand.

This raises the same questions that have been voiced of late in many of Stereophile's reviews and in the "Letters" section. What is the ultimate audiophile goal: to achieve timbral accuracy, or to assemble a system that delivers hour after hour of musical satisfaction? To my mind, these goals are never mutually exclusive. But how much value you give to each will determine in large part which components and accessories you favor.

In an age when many audiophiles are far more familiar with electronic and amplified sound than live music presented without electronic intervention, sonic preferences are less dependent on "natural" references. At its best, audio has become an art form in itself, in some ways divorced from what those (such as I) who have been raised on acoustic music might consider "the real thing." In 2004, the ultimate arbiter of preference lies in knowing your own sensibilities and loves so clearly that the system you assemble becomes a clearer and clearer channel for what makes you feel at one with the music.

Jason Victor Serinus is a Bay Area writer, audiophile, and music critic who by day is a professional whistler: www.planetaria.net/home/whistle.
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Stereophile, April 2004
“They dazzled me ... I was mesmerized ...
Over and over, magic is what I heard ...”

- Jeff Fritz, SoundStage! on the Studio 100 v.3
Editor:
Mikey Fremer and Art Dudley are the best things about Stereophile. Please give them a raise and let them know just how wonderful they are. I don’t agree with everything they say, but they remain entertaining and informative. They are the two best reads in any magazine today.

Richard Jenkins
rfjj@shaw.ca

Good stuff, Tom
Editor:
I just wanted to send Thomas Conrad a note to thank him for writing such a generously kind and glowing review of my new CD, Filling Up, in December (p.168). I’m so pleased that the music touched him. Joe Ferla was as much a part of the music as any of us, and he’ll be happy to hear about this too.

Geoffrey Keezer
geoff@geoffrykeezer.com

Good stuff, Maynard!
Editor:
Kudos regarding Keith Howard joining Stereophile. His “The Law of Averages” article in January (p.57) was thought-provoking, and the downloadable samples were a great idea. Keith’s article reminded me a lot of the defunct Audio magazine, which published a lot of hobbyist stuff. Good stuff, Maynard!

Dave Mishler
DMishler@medrad.com

Keith’s latest article appears elsewhere in this issue. But who’s Maynard?

Bad show, Dave
Editor:
I was appalled to see that Dave Hart’s letter (October 2003, p.11) was published without comment. He is trying to argue that Stereophile should not review surround-sound gear. The basis of his argument was, “One may only need remember the name of this well-respected publication.”

Oops! The Greek prefix stereo means solid. It has nothing to do with the number two. Was the lack of editorial comment just an oversight, or is Stereophile joining the PC revolution against learning?

Brian Remington
blr@dmw.com

I guess we don’t need no education, Mr.

Remington. Seriously, I prefer not to stomp on people’s statements, in the belief that a reader will step in with a correction. Just as you have done here!

Barry was right and wrong
Editor:
I have just finished reading February’s “As We See It” and feel compelled to comment. I am an audio/video salesperson in a high-end store in a large metropolitan area. I and the five salespeople I work with sold close to 250 flat-panel televisions in 2003, so I feel safe calling myself an “expert” on this topic. The observation Barry Willis made of the audio/video business and where it stands currently, with flat-panel televisions dominating sales, is quite accurate. However, his explanations of the reasons for this are incorrect.

The biggest mistake he made was to state that margins on flat-panel televisions are higher than on audio equipment. Nothing could be further from the truth. I assure you that margins on flat-panel televisions are actually 15-20% lower than on similarly priced audio equipment. This led to his second error—that salespeople are not motivated to sell high-end audio to go with the customer’s plasma purchase. I am more than motivated to sell high-end audio—as are most of my peers—not only because of the higher profit margin, but, more important, because most of our passions are in audio to begin with, rather than video.

The real reason this “problem” exists is because most consumers really don’t care about sound anymore. Don’t believe me?

Look at how many people use their crappy computer speakers to listen to music. Every single person who comes into my place of business looking at high-end video (or anything else, for that matter) gets a high-end audio demonstration. Even the individuals who swear they are “not audiophiles” can hear the differences between “okay” and “outstanding” audio systems, but most aren’t willing to pay for that difference. It is incredibly sad how many $25,000, 61” plasma displays we sell with $3000 surround-sound systems. It is very much an uphill battle.

The “retail salesperson” is actually working incredibly hard to educate the consumer about the benefits of a high-end audio system to go with their flat-panel display. If only more people would listen.

Jason Zucker
jasonz29@yahoo.com

Michael & Julian
Editor:
I am not through reading the February Stereophile, yet I feel compelled to say something. I have watched from the sidelines for years as various people have written Stereophile and said, “It’s the music, fool” or “It’s the sound, moron.” I also have noticed that these letters take one or the other of these positions and say it is correct and the other, therefore, wholly wrong. This debate has recently flared anew. I have been spurred to get up from my warm bed and trek down to my office to write this letter.

Julian Hirsch died recently. Many who are involved in this hobby, pastime, passion, life — label it what you choose — are aware of Mr. Hirsch’s passing, and most were probably saddened at the news. I know I am. With the knowledge of his passing fresh in my mind, I have just read and re-read the last four paragraphs of Michael Fremer’s latest column. I am more than disappointed with the less-than-slight jab MF took at Julian Hirsch in those paragraphs.

I have spent many an hour poring over “Analog Corner,” dreaming of the day when I can enjoy the truly magnificent experience a good turntable can provide. Part of the reason I am so anxious for that to happen is Michael’s obvious passion for analog and his obviously deep knowledge of how to get the most from it. When I listen to a turntable, I keep in mind what MF may have said about it in “Analog Corner.” Would I be doe-eyed enough to

Letters
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Stereophile, April 2004
assume that a turntable that sounds bad is actually good because MF may have said that it is. Probably not. Would I trade my current loudspeakers for a pair that MF said is better without hearing them, or, worse, after hearing them and knowing they are bad? I don't think so. Even if I were to do either of these things, would I then have the inclination to blame MF for steering me wrong when I make an obvious mistake by not trusting what I had heard? Never.

I came to this hobby relatively recently—in 1992, as a fresh-faced senior in high school—so I have not a full understanding of the history of this hobby or the wisdom of ages spent laboring over it. However, I do have sincerity and the ability to think and hear for myself. I have never taken an opinion written in any audio magazine, by any author, regarding any subject, at face value. To do so would be folly most of the time, for it is the rare magazine article that dispenses true knowledge disguised as just another review of just another turntable. A great deal of space is spent in Stereophile discussing who's right and who's wrong. The fact is, not one of you is right. John Atkinson might disagree with MF, who then might disagree with Julian Hirsch, who then disagrees with J. Gordon Holt, and I assume what? In the end, when I sit down behind a piece of audio equipment, it's just me and the music.

If Stereophile listened to a component first and said, "Hey guys, you've got to check this out" and I'm in the market, I'll go listen. Why? Because JA measured it and the manufacturer is telling the truth in the specs? No. Because JGH got goosebumps? No. Because it made MF believe that the pianist was sitting next to him on the couch? No. I go because I trust that audio equipment that inspires a recommendation from any of these men deserves a listen—not a purchase, a listen.

If this hobby is a ship, then all of the audio magazines, including Stereophile, are its rudders. Stereophile can't do it alone, and the audio community can't go on without the magazines. Every piece of this magazine is important: the measurements, the opinions, the letters, the ads. All of it comes together to tell us, the readers, where to listen, not what to think or what to hear.

It is therefore an affront to what Julian Hirsch tried to force audio manufacturers to do—tell the truth—to blame him for confusing, demoralizing, and tearing down this hobby. If Julian Hirsch tried to demean this hobby by making people tell the truth, what are the current writers at Stereophile doing? Lying to readers to keep the hobby alive? It is a slippery slope, to be sure.

I think if everyone stops and really considers what motivates the true audiophile, it is the pursuit of accuracy in support of the emotional involvement. I also think that everyone who is serious about that pursuit will realize, with a little more thought, that the opinions in Stereophile's component reviews go hand-in-hand with the measurements of those same components. The fact that they can do so is solely attributable to Julian Hirsch, who I think deserves much better than the slight slaps cast his way by MF. Maybe the intentions of the last four paragraphs of February's "Analog Corner" were noble, and Michael's comments were meant to be guidance for Stereophile's younger readers, but they should not have been made at the expense of Julian Hirsch.

Jonathan Sones
buisonet@lampushr.com

Jonathan, I appreciate your letter to Stereophile and accept your criticism of my comments regarding Julian Hirsch. You are correct that I meant it mostly as a cautionary tale to audiophiles to not take what's written in Stereophile or anywhere else at "face value," if that means relying on it to buy something without first auditioning it. However, I don't believe my comments were "at the expense of Julian Hirsch." Was I being critical of him? Yes. I'm a critic. He was a critic too. I was critical of him for a variety of reasons when he was alive, and I see no reason to change my criticism now that he has passed on. I think my comments regarding Mr. Hirsch were "fair and balanced." I would hope for such a "criticial" obituary myself—one that painted an accurate portrayal of me as a man and as a hi-fi critic—as opposed to a weepy effort that glossed over my many failures. It would both be more honest and make me appear to have been more human.

—Michael Fremer

Art & Gordon
Editor:

Like a number of your readers, I've been trying to make sense of the conversation between J. Gordon Holt and Art Dudley in recent issues. The critical difference between them is that Mr. Dudley is paying attention to the audio system as an instrument that conveys the music, while Mr. Holt is attending to his own experience of live music. Mr. Dudley seems to be interested in exploring each component as an instrument and the kinds of impact it makes on his listening. Mr. Holt is speaking to his and the audiophile community's desire for the ongoing development of systems that better re-create the live musical experience. Each thinker is pursuing a different task.

I like to imagine that this is the opening of a longer conversation that might bridge these differences in perspective and, by doing so, enrich our general exploration of how audio makes magic.

Dick Nodell
Editor

Gordon & Mike
Editor:

If I may be allowed to dip my toe in, I'd like to reflect on J. Gordon Holt's response to G. Matthew Wong, et al. ("Letters," February, p.11), with respect to what we seek in pursuit of good sound.

Holt writes that he didn't intend to be "flippant" (as accused), but dismissive: "This topic is not worth arguing (and serious discussion is quite out of the question) ..." Holt's sonic ideal of "live, unamplified acoustical music" is also mine. He labels himself a "stodgy old fart." The old-fart part fits me, too, purely as a matter of calendrical fact. Stodginess is a judgment for others to make. Anyway, in old-fart- hood lies a clue to the debate's essence. Mr. Wong's having hauled Deconstruction down off its obscurantist pedestal only serves to assist what I hope may prove an insight.

Our melodrama's mustache-twirling heavy is Mr. Wong's "Deconstructive philosophical model." Prior to Jacques Derrida and his academic hashishins, the culture actually assigned values. No, really—it's true! Classical music was "good" music. It was called, absent irony, "serius" music, implying, of course, that all else was relatively frivolous or in some way less valuable.

With respect to so-so, good, better, best— with respect, in other words, to the regard in which things are held (e.g., given lip-service)—hi-fi came into its own at a time when "good" music carried the field, whatever the actual size of its audience. Canned sound strove to approach that ideal. Holt and I, along with a handful of doddering others, hold this yet to be the case as we sit here in Phil's Bar and Grill waiting for the happy hour.

To almost repeat the above: In its live setting, classical music, scattered modernist exceptions notwithstanding, fills geezerdorn's bean ideal of unamplified acoustic sound. But Richard Murison correctly observes (p.9) that, depending on who one sits in the hall, live unamplified acoustic music has its own pitfalls. Although I understand and sympathize with what Harry Pearson intended, I'm not entirely comfortable with his coinage "the absolute sound." I'd have preferred "ideal." When we contemplate the pleasures of live sound, acoustic and unamplified, it's more a question of the rare ideal over the far more frequent real; likewise its canned facsimile.

Mike Silverton
Editor, LaFollette.com

A parting shot
Editor:

I decided to let my subscription to Stereophile lapse, but I'm still receiving issues. I just read the "Letters" section, which I find to be occasionally amusing, then just throw the issue away...

After reading Stereophile for a little over a year, I have to say, "I just don't get it!" It's not that I don't understand it; I understand it all too well. When a component's
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power output is rated at 10% THD, that's one thing. But when you talk about a $29,000 phono preamplifier as if it has come straight out of the covenant box, you've lost me. Literally. I simply don't believe it is necessary to spend the kind of money you imply is necessary to achieve really excellent sound. Wonder why the present generation could care less about hi-fi (even Stereophile, perhaps)? Look at the cost of the products you review.

So, here's my parting shot: With a few modest conditions, I propose that no one can tell any audible difference between a pair of 10', 16-gauge — no, what the hell, 18-gauge zip-cord speaker wires — we're talkin' Ace Hardware lamp wire here — and a 10' pair of any other speaker wire out there, no matter how expensive. You can use jumper cables if you want. Pure gold wires. Copper 2x4s. Whatever you want. Well, almost. As I said, there are some modest conditions.

The test must be good science. Double-blind. Statistically significant. It should be easy, right? The test must be done in good faith. No wildly exotic loudspeakers that react in extreme ways to minuscule changes in cable reactance. No speaker cables with ridiculous amounts of inductance or capacitance. No comparison wire with an equivalent gauge lower than 18. Good faith. You know what I mean.

Unfortunately, I am a man of modest means and can't offer any "reward" for proving me wrong. But let me assure your readers that I would love to be proven wrong. The High End, after all, has a certain natural appeal. But if no one can prove me wrong, given my modest conditions, whether the High End? As P.T. Barnum once said...?

Steve Lindenfeld
SteveL@qtm.net

Correcting the record
Editor:
I noticed a couple of small errors in the 1989 article about the first Stereophile recording project (www.stereophile.com/interviews/527/index2.html). Kavi Alexander asserts that the Ampex MR70 tape recorder was never marketed. I have a flyer from 1968 that describes the MR70. The two-track, ¼" model in the console was priced at about $5,500. (The AG440-2 in a console was only $2,800.) I've forgotten where I got the flyer. It may have come with the MR70 I bought in 1977.

The heads are fixed-azimuth. (A variable-azimuth playback head was a $50 option.) The tape guides are not grooved but the flutter idler is. This assembly has fixed guides, a viscous-damped flywheel, and an Ashland motor that runs for a fraction of a second to spin it up to speed in Play or Record. I agree with Kavi that the MR70 is an extraordinary machine!

Euclid Coukouma
Euclid.Coukouma@nbc.com
More configurations than Mr. Potato Head.
US: NEW YORK CITY

Stereophile Staff

Hitting newstands this month is a new magazine from Stereophile's publisher, Primedia: The Connected Guide to the Digital Home, the first consumer magazine dedicated entirely to adopting and integrating audio, video, information, telecommunications, security, and other personal and home technologies. Formerly known as Audio Video Interiors (AVI), the standard-bearer for the home-theater revolution, The Connected Guide to the Digital Home is the natural evolution of AVI.

Beginning with its debut March/April 2004 issue, Connected will aid "tech-aggressive" consumers as they acquire and adapt high-tech solutions to creating and maintaining extraordinary homes and lives. Connected will be published eight times a year, with bimonthly publication for the first three issues (March/April, May/June, and July/August), then monthly publication from September through December 2004, followed by a bimonthly January/February 2005 issue. Connected will deliver a circulation rate base of 70,000.

Bill Gloede, previously editor of MediaWeek and Cable World, will be Connected's editorial director. Gloede, a noted industry arbiter of media convergence who has covered the market for the past 20 years, oversees a staff of contributors specializing in a wide array of technologies, product integration, and the lifestyles of "connected people"—it, upmarket early adopters. "This discussion of entertainment technology convergence, first profiled by AVI, will expand to reflect strong consumer demand for newly interconnected entertainment, information, and telecommunications products and experiences," said Gloede. "The Connected Guide to the Digital Home is focused on the enthusiast who demands productivity from their networks to achieve convenience, utility, security, and efficiency."

Consumer-electronics industry veteran Krispy Rushing will serve as editor of Connected. Rushing is the former executive editor of Stereophile Guide to Home Theater, Home Theater Buyer's Guide, and Home Theater Interiors, and former managing editor of Home Theater magazine and Digital Home Entertainment. Rushing also served as a contributing editor for AVI and Wired magazines, and is the author of the book Home Theater Design: Planning and Designing Media-Savvy Interiors.

US: SEATTLE

Barry Willis

Engineer Victor Tiscareno and marketing executive Byron Collett have announced their departure from Red Rose Music, effective January 1. The founding partners of AudioPrism have then renewed their employment contacts, citing "compelling interests elsewhere"—primarily a new and still unnamed technology company that will bridge traditional two-channel audio, multichannel, home theater, and multimedia. Mark Levinson remains CEO of Red Rose. The departure was an "amicable agreement" by all parties, according to Tiscareno. "We wish Mark continued success with Red Rose," he stated. He and Collett demonstrated prototype loudspeakers at January's Consumer Electronics Show, where they made their announcement via a press release distributed on the show's first day.

UNITED KINGDOM

Paul Messenger

Path Premier, a subsidiary operation of the Path Group, has been one of the leading UK distributors of high-end audio products for the past 15 years—second only to Absolute Sounds, in all probability. Sadly, recent events have led to the announcement that this sector of the business is being closed down: happily, Nigel Crump, who effectively ran Path Premier, is now setting up his own, as yet unnamed, operation to continue representing most of the brands.

The main problem was a drastic shortage of new product from such key Harman-owned brands as Mark Levinson and Revel, which together accounted for more than half of Path Premier's turnover. The cause seems to lie in Harman's decision, at the beginning of last July, to reorganize the Harman Specialty Group by closing the Madrigal

Those promoting audio-related seminars, shows, and meetings should fax (do not call) the when, where, and who to (212) 886-2809 at least eight weeks before the month of the event. The deadline for the June 2004 issue is April 1, 2004. Mark the fax "Attention Stephen Mejias, Dealer Bulletin Board." We will fax back a confirmation. If you do not receive confirmation within 24 hours, please fax us again.

Attention All Audio Societies: We don't have room every month to print all of the society listings we receive. If you'd like to have your audio-society information posted on the Stereophile website, e-mail Chris Vogel at List@antiphon.hypermart.net and request an info-pack.

Please note that it is inappropriate for a retailer to promote a new product line in "Calendar" unless this is associated with a seminar or similar event.

CALIFORNIA

• Friday, March 19, 6pm: Audio Vision San Francisco will host an evening seminar featuring the new Home Theater and Limited Edition Moon products by Simaudio. RSVP: info@audiovisions.com or call (415) 614-1118.
• Tuesday, April 20, 7-9pm: Audio Vision San Francisco welcomes Robert Suchy of Clearaudio and Garth Leerer of Musical Surroundings for a presentation on everything analog. As part of the Analog Emotion Tour, attendees can register to win a free Clearaudio Emotion turntable.
Justice Department often scrutinizes standards-setting efforts by large electronics companies. The DVD Forum issues explicit instructions to members telling them to avoid any actions that might be considered anti-competitive, such as coordinating pricing.”

In December, the Forum’s steering committee gave the nod to a red-laser format called HD DVD, developed by Toshiba and NEC. HD DVD has the advantage of being back-compatible with standard DVDs and standard DVD drives, claim its backers, who note that retooling DVD machines for mass production of HD DVDs would be relatively inexpensive, with savings passed on to consumers.

Some industry insiders fear a format war. Toshiba claims that first-generation HD DVD machines could be priced at around $1000 each, compared to Sony’s first domestic Blu-ray recorder, which went on sale in Japan last year for about $4200. Affordable hi-def DVD player-recorders could spur the already hot market for home theater equipment. Standard DVD players are now in approximately 50% of US homes, but high-definition displays are in fewer than 10%.

Dell and Hewlett-Packard endorsed Blu-ray at the Consumer Electronics Show in Las Vegas, and announced that new products from both companies would incorporate the format. Both have expanded from their traditional bases, making forays into the home entertainment space. This trend should continue to grow as computers and consumer electronics become increasingly intertwined.

**YOUR DESKTOP PC**

Jon Iverson

The format battle over what goes into your audio player’s disc drawer could soon be rendered moot. Forget SACD and DVD-Audio: it’s the format war taking place on your desktop that may determine the real future of audio. And, believe it or not, audiophiles might win, too.

Apple OS X fans have had an operating system that supports 24-bit/96kHz recordings for some time; what about Windows? I sat down at January’s Consumer Electronics Show in Las Vegas with David Cautlon, the group product manager for Microsoft’s Windows Digital Media Division, to discover what was behind the Windows Media Audio logos that are starting to pop up on consumer electronics gear (such as the new Pioneer Elite multi-channel receivers), and also to learn how the future might play out for high-resolution audio.

Microsoft’s Windows Media platform contains the Windows Media...
The dm38 stereo amplifier.
Two channels in one unit.

The Halcro dm38 power amplifier.
All the outstanding qualities of our monoblocks in a single stereo unit.
No other amplifier on the market produces such low levels of distortion. Signal interference is virtually eliminated, unearthing more ambient detail. A lower noise floor brings greater dynamic range. Top-end, mid-range and bass are life-like and uncolored.
Halcro delivers pure music, completely natural and non-fatiguing.
Listen for yourself.
Audio (WMA) encoder and decoder needed to play typical MP3 audio files, not to mention the highly compressed WMA files available for download from music services such as the relaunched Napster. It can do this not only on your Windows computer hooked up to the Internet, but also on any device that has the software built in, such as those new Elite receivers.

The latest version of Windows Media, the 9 Series, also contains Windows Media Audio Pro, which can encode and decode up to eight channels of 24/96 LPCM audio. Here's the interesting part: it can do this using either an adjustable lossy compression scheme optimized for the 24/96 data, or encode/decode the signal using a lossless compression codec that still halves the storage space needed by using a proprietary scheme similar to one used by Microsoft's Meridian Lossless Packing (MLP) process used with DVD-Audio.

A 24/96 audio signal can therefore, using a fixed or variable bit-rate encoder, be compressed at a variety of rates that render the file small enough to enable consumers to download over the Internet, and then be reconstituted as a 24/96 PCM file in the player—even if the file is a 5.1- or 7.1-channel mix. To prove this last point, Caulton fired up the WMA Pro player and clicked on a downloaded 24/96, 5.1 mix of Pink Floyd's "Money," which was reproduced with surprising fidelity on the modest demonstration system.

Microsoft now faces a chicken-or-egg dilemma: Without much WMA Pro software out there yet, how do you get the hardware manufacturers to start including the platform in their new products? Without the hardware, why would record labels release music in the format? To prime the pump, Caulton says that Microsoft is starting to work with many of the chip manufacturers that supply the DSPs for consumer preamps, receivers, and disc players. "Our mission is to make sure WMA Pro is included in all classes of devices," says Caulton, in an effort to provide "play anywhere" portability.

And what about those pesky Digital Rights Management (DRM) restrictions that legitimate downloaded audio files have these days? Caulton suggests that "those are issues to be worked out between the record labels and the consumers. We just supply the DRM tools, but they decide which ones to use and how to use them." He adds that he hopes content providers can find a middle ground that makes consumers happy, a solution that has so far eluded DVD-A and SACD. He noted, "It's nice that the formats have 5.1 and higher-resolution audio, but the mass market prioritizes convenience."

Looking toward the relatively near future, Caulton envisions downloadable audio files being made available in a variety of resolutions, including 24/96 5.1. He also sees 24/96 WMA discs eventually being released, thus closing the circle with one format to rule them all, both on and off the desktop.

There's only one problem. Apple and several others, whose own AAC-based formats are incompatible with WMA, will likely begin to scale to higher audio resolutions themselves. We'll have more on that in a future report. Caulton notes that Windows Media Player has a plug-in capability that can be used to add decoding for MPEG4, including its AAC codec. It's just that Apple and others are using AAC inside of proprietary DRM schemes that can't be played by others. Caulton also cautions that WMA Pro is not currently compatible with DVD-A or SACD data because the formats use different schemes for encoding and compressing data. But who knows? After the online format wars subside, even that could change.

The day after I talked with Microsoft, I met with one of their key competitors, Real, who also promised that, as the markes: matures, we will see more options from Real for audiophiles. Presently, Real's own codecs support only your basic lo-rez Internet formats, ranging up to a proprietary lossless encoding/decoding process similar to DVD-A's MLP, but applied to a CD datastream. The result is a file that is typically half a normal CD's size without any compression.

Real's latest player, RealAudio 10, supports not only the company's own codecs mentioned above, but also those of Windows Media Audio Pro and Apple's version of AAC. The result is a single program that can manage a variety of formats in one place—and, because it runs WMA Pro, it can decode Microsoft's 24/96 5.1 or 7.1 files.

Real's Jason Milstead revealed another interesting side effect of this multi-format capability: You can burn any of these formats to a CD from the RealPlayer, then re-rip them back to almost any other format. This means listeners would be able to play Napster's

Windows Media Audio Pro can encode and decode up to eight channels of 24/96 LPCM audio.

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**Industry Update**

**OREGON**

- Thursday, March 18, 6:30pm: Stereotypes (Portland) will present an evening featuring the new Home Theater and Limited Edition Moon products by Simaudio. For more info, call (503) 280-0910.

**VIRGINIA**

- Wednesday, April 7, 6-9pm: Deja Vu Audio (McLean) celebrates the grand opening of their new location with Robert Suchy of Clearaudio and Garth Leerer of Musical Surroundings. As part of the Analog Emotion Tour, attendees can register to win a free Clearaudio Emotion turntable with Satisfy tonearm. RSVP: (703) 734-9391.

**WASHINGTON**

- Saturday, April 17, 4-9pm: Experience Audio (Seattle) is hosting an open house with Robert Suchy of Clearaudio and Garth Leerer of Musical Surroundings. As part of the Analog Emotion Tour, attendees can register to win a free Clearaudio Emotion turntable with Satisfy tonearm. RSVP: (206) 729-7209.

**PUERTO RICO**

- etcetera, inc. (Guaynabo) will be hosting private auditions all through the months of March and April to introduce the new G Series from Meridian Audio. To schedule an appointment, call (787) 378-3388 or e-mail info@etceterainc.com.

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Stereophile, April 2004

WorldRadioHistory

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incompatible files on an iPod. Milstead says that the company's studies show that 80% of their users burn CDs with the RealAudio player.

Real's Kevin Forman adds that while they have no higher-resolution audio formats of their own ready to release in 2004, the future is open, depending on the market's demands. In other words, once the mass market starts requesting higher-fidelity music, which Forman thinks is inevitable, Real will keep scaling their player to keep up. Forman says that SACD/DSD and DVD-A are not being considered right now, but that could change if the formats catch on.

PC chip maker Intel is also getting into the hi-rez audio act. The company's next-generation audio specification, previously code-named Azalia, has a new moniker: Intel High Definition Audio. Intel says the new spec includes an upgraded overall architecture and increased bandwidth to allow for 32-bit/192kHz multichannel audio and support for "evolving high-quality audio formats."

Intel reports that the HDA spec is currently at the Rev.0.9 level; the company expects to release the final version by mid-year under royalty-free license terms. Intel adds that the technology will also be featured with the Grantsdale PC chipset, scheduled for release in the first half of this year.

According to Intel, the HDA architecture is designed on the same "cost-sensitive principles" as the previously announced AC'97 (Audio/Codec '97), and will allow for "an improved audio usage and stability level for onboard PC audio devices." Other features of HDA include increased support for multi-channel-array microphones for high-quality input, dynamically allocated bandwidth, and configuration flexibility for audio devices.

Intel's Kevin Corbett says, "The PC is a versatile platform for digital media and is playing an increasingly large role in DVD-Audio, streaming music services, and home theater applications."

**UNITED KINGDOM**

**John Atkinson**

We are saddened to report the death of Decca recording engineer Kenneth E. Wilkinson on January 13 at the age of 92, in Norfolk, England. The news was reported by LP historian Michael Gray of The Absolute Sound on the Internet newsgroup rec.audio.high-end.

"Wilkie," as he was universally known, was one of the driving forces behind the audio excellence of Decca/London's classical recordings in the label's fifties and sixties heyday, from the 1950s to 1980, when he retired. He started his career at World Echo records in 1927, at the very dawn of electrical recording, and retired just before the advent of commercial digital recording. He did work on some early Decca digital projects, however, according to an appreciation by Tony Faulkner in the July 1981 issue of Hi-Fi News, published to coincide with that magazine's giving Wilkinson one of its annual Audio Awards.

Wilkinson joined Decca in 1931, when Decca acquired the Crystalate Company, for which he then worked. He worked on the development of moving-coil disc cutting and, during the war years, on the recording of Luftwaffe night-fighter codes. But it was his work with Arthur Haddy in the mid-1950s, adopting Roy Wallace's Decca Tree microphone array for stereo classical recordings, that laid the foundation stone of his career's golden days, when he recorded literally thousands of orchestral sessions with more than 150 conductors.

No purist, Wilkie augmented the Decca Tree's three omni microphones with outriggers and spot mikes — whatever was required to communicate the music. He felt that a coincident miking technique was not capable of reproducing a realistic hall sound with a natural sense of ambience, compared with techniques using omnidirectional microphones. His own work demonstrates that thesis: According to an appreciation by producer Tam Henderson of Reference Recordings, published by Audiophile Audition in 2003 when the webzine reported that Wilkinson had been presented with the Walter Legge Award, a Wilkinson orchestral recording has a "rich balance, which gives full measure to the bottom octaves, and a palpable sense of the superior acoustics of the venues he favored."

Wilkie's favorites of the LPs he worked on were the Decca recordings of Benjamin Britten's War Requiem (SET 252-3), and Georg Solti's Grammy-winning Berlioz Symphonie Fantastique (SXL-6571). I would tip my hat to the series of recordings he worked on with producer Chuck Gerhardt for The Reader's Digest in the 1960s, before nominating as my favorite the LP of works by French composers conducted by Gerhardt and produced and engineered by Wilkinson, and released in the UK by RCA (Red Seal RL 25094) in 1978.

A giant used to walk the world of recording. All we can do is walk in his footsteps.

**US: WALL STREET**

**Barry Willis**

The rumored economic recovery may not be simply spin and hype, if financial reports from the consumer-electronics industry are any indication.

On January 28, Harman International Industries, Inc. announced record sales and earnings for its second fiscal quarter, ended December 31, 2003. The electronics firm — based in Washington, DC and Northridge, California — posted a 24% increase in net sales for the quarter, a total of $691.6 million compared to $560.0 million during the same period last year. Net income was up more than twice that percentage — a 50% increase over the same period last year, $41.5 million vs $27.6 million.

Harman International, the largest US audio manufacturer, is the parent company of the Harman/Kardon, Infinity, JBL, Lexicon, Mark Levinson, and Revel brands. For the six months ended December 31, Harman's net sales totaled $1,289 billion compared to $1,051 billion the previous year, an increase of 23%. Net income for the six-month period rose by an astounding 64%, totaling $61.2 million compared to $37.4 million last year. Growth was clearly strongest at Harman's Consumer Systems Group, which reported net sales of $571.6 million for the second quarter, a 28% rise from last year's $447.9 million. By comparison, Harman's Professional Group net sales rose by a respectable but less spectacular 7%, totaling $120.0 million vs $112.1 million last year. During the record second quarter, Harman stockholders approved a two-for-one stock split. Harman has a strong presence in both the consumer and professional audio markets, one of a handful of companies that do.
Manufacturers, of course, don't do any business without retailers. On December 31, Tweeter Home Entertainment Group, Inc. reported that for the first fiscal quarter, ended December 31, total revenue increased 2%, to $255 million from $250 million for the same period last year, although comparable-store sales decreased 1%. Net income for the quarter was $5.1 million, compared to $5.2 million last year.

Tweeter, which operates upscale home-entertainment stores throughout most of the US, stated that it had experienced “greater sales of video products and lower sales of audio products” during the most recent quarter, “a continuation of a several quarter trend.” The company's fiscal 2003 revenues totaled $787 million. Tweeter president and CEO Jeffrey Stone said, “We fared well compared to the industry. All forms of new technology television are driving top-line sales, including plasma, LCD, and DLP technologies. Flat-panel sales accounted for 19% of the quarter’s revenue while DLP accounted for 8% of revenue.” Tweeter executives have initiated new “supply chain and inventory management” methods that they hope will boost profits in coming months.

**DENMARK: AARHUS**

**Paul Messenger**

Would I like to pay a visit to Danish speaker specialist Dynaudio? A tempting offer, I thought; Dynaudio is one of the more interesting hi-fi speaker specialists around. However, the news-gathering business sometimes has its trials and tribulations. Having tweaked my lower back en route to the airport, I was pretty frazzled when we finally arrived in Denmark’s second city, Aarhus, having taken 10 hours to cover less than 500 miles.

Early risers, the Danes, as well as one time zone east of the UK, so the following foggy midwinter day began a little before the crack of dawn, followed by another longish drive to visit the factory where Dynaudio’s upmarket, real-wood cabinets are made. I admired the veneers, but noticed that the veneer was being V-grooved before subsequent folding, rather than the dovetail joinery I’d expected.

Things got much more interesting when we returned to headquarters. Dynaudio is a good-size operation, turning over more than 930 million annually, of which 60% is in specialist hi-fi (plus 25% in-car and 15% pro audio). HQ employs around 140 people, including 17 in R&D, and the company is understandably proud of its unique proprietary drive-unit technologies.

All Dynaudio drive-units — bass, mid, and treble — are made in-house, each one taking around half an hour and involving a number of tricky and critical operations. The bass/mid drivers are particularly distinctive, their oversize voice-coils ensuring exceptional power handling, while the combination cone-dome diaphragm is claimed to supply smooth off-axis transitions with rising frequency. There are other unusual features, such as positioning the magnet proper inside the voice-coil, with an additional external ferrite ring to ensure magnetic symmetry. Quality control is taken very seriously throughout the factory, to the point that each top-of-the-line Esotar tweeter has its mechanicals “tuned” by ear.

After touring the production lines, we had an entertaining Q&A session with Mark Thorup, Dynaudio’s technical head honcho, who has many interesting and unorthodox ideas. One pertinent question: Why does Dynaudio fit its speakers with only a single terminal pair, eliminating bi-
wiring and biamping options? This is because Dynaudio uses ultra-simple first-order crossover networks, and Thorup believes that the most even overall impedance is achieved (in a two-way design, for example) when the rising impedance of the inductor in series with the main driver and the falling impedance of the capacitor feeding the tweeter are connected together. The impedance variations in each of these are much larger when separated than when combined.

Thorup also commented that a speaker usually sounds better when auditioned slightly off-axis, and should be designed with its off-axis performance very much in mind. That's partly because there's only one true axial response, compared to an almost infinite number off-axis plots. More serious and significant, the off-axis responses play a vital role in the speaker's farfield frequency balance, as they're necessarily the origin of the soundwaves reflected off walls, etc., en route to the listener. What one hears is a mixture of direct and room-reflected sounds; the farther back one sits from the speakers, the greater the proportion of room-reflect ed sound in the mix, to the point where it can easily dominate the direct sound. I don't necessarily go along with all of Thorup's philosophies—I have a soft spot for high-sensitivity designs, for example, which he reckons invariably involve unwanted resonances. But speaker design has always been a broad church well able to accommodate different choices and compromises. There's no denying that Dynaudio's long-term success validates its logical, consistent, and distinctive design approach.

**GERMANY**

**Barry Willis**

In late December 2003, German manufacturer Sennheiser announced its new flagship headphones, the HD 650. Based on the overall design of the award-winning HD 600 (a favorite of Stereophile reviewers), the open-air HD 650 is said to combine "an extremely flat frequency response (10Hz-39.5kHz ±10dB) with natural dynamics, superior resolution, and a smooth, uncolored sound." Major improvements are claimed in the 650's enhanced bass response and reduced high-frequency distortion. According to a press release, the HD 650 features "an upgraded cable, hand-selected, matched transducers with tight tolerances (±1dB), computer-optimized magnet systems for minimizing harmonic and intermodulation distortion, and extremely light-weight aluminum voice-coils for accuracy, fast transient response and low distortion." Sennheiser claims the HD 650 delivers an "extremely natural, spatial sound image." Suggested retail price is $499.95.

**GERMANY: LANGENARGEN**

**Peter van Willenswaard**

The fourth European Triode Festival (ETF) was held in December 2003, at a family resort two minutes' walk from Lake Constance. The tradition began a year after the sad demise of Sound Practices in 1999. Until then, the American magazine had for eight years served the needs of do-it-yourself (DIY) folks deeply involved in vacuum-tube technology, especially triodes. To fill the gap, at least on this side of the Atlantic, the ETF was founded; the first Festival took place in August 2000 in Aarhus, Denmark. (See www.triodefestival.net for pictures and impressions from ETFs 2000-2003.)

This time there were some 80 attendees, mainly from Germany, Denmark,
Introducing the prodigious Sub 30 Powered Subwoofer, the most recent addition to the Ultima series loudspeakers. Luxuriously sculpted with graceful contoured lines and an elegant sheer convex grille, the Sub 30 sets the standard in high-performance deep bass reproduction. The Sub 30 features very low-frequency reproduction with comprehensive in-room response tuning capabilities. A 15-inch inverted dual layer metal dome active driver with built-in 1000 watt power amplifier and a matching 15-inch auxiliary acoustic radiator deliver truly spectacular and detailed deep bass, reaching well below the limits of human low-frequency hearing. The Sub 30 is the ideal choice to mate with other Ultima series loudspeakers for the ultimate in stereo and multi-channel audio reproduction.
Stereophite, the phono pieces the transformers were homemade. There wasn't one famous, expensive high-end cable in sight. I did spot an Audio Note M-7 preamp, top budget and in immaculate condition, but it stood unconnected in a corner, switched off. Digital sources were present in all their variations—CD, SACD, DVD—but were, without exception, heavily modified. There were a couple of homemade CD players too.

The quality of the electronics was extremely high, technically and sonically. I was a bit more reserved about the speakers. Most of them were horns (a modified Altec Voice of the Theatre, for instance), or single-unit widescreen systems (Lowther is a name you might know). I saw only two pairs of "conventional" speakers, from 3A and Audio Note K.

Horn speakers are unmatched in two areas: dynamics, and their ability to generate near-car-foot-levels from such a size. The speakers are usually the largest, and perhaps the most challenging, of the sets. But their colorations nearly always wear me out after some time. However, I was in for a surprise.

The largest demo room also doubled as a conference room for the Festival's series of lectures and demonstrations. The first speaker had been invited from the US: 60-year-old Steve Bench, who, via the Internet, bombards the DIY congregation with a never-ending stream of crazy designs (http://members.aol.com/sbench101; take a look at his weird no-Rs-no-Cs designs!). At ETF, Steve explained the principles of a Matrix amp—a normal push-pull mono tube amp converted into two single-ended (SE) stereo channels, while maintaining the push-pull output transformer. One channel is fed the L (left) signal, the other the R (right). The existing output transformer thus handles the stereo information (S=L−R), and an additional transformer is hooked up to pick up the mono information. The secondary windings of these transformers are then cleverly interconnected to re-create the L and R channels by simple summation (the Matrix amplifier is also featured on the website). Normal SE amplifiers run in class-A by definition; the Matrix is the only SE amp that can be pushed into class-AB.

Next was Guido CD transport. From Holland (www.tentlabs.com), who dealt with the heat-supper-supply problem in direct-heated tubes such as the 300B, 2A3, 45, and so on. He showed that the tubes' signal-current properties differ from spot to spot along the heater-cathode wire; hence, a traverse signal current through the filament must be reckoned with. This implies that the way the heater is powered must influence the tube's audio performance. There followed an internationally organized demonstration of four different heater supplies on a mono 300B amp built by a German: AC 50Hz (aboard the amp), AC 100kHz (built by a guy from the US), DC current (built by Tent), and DC voltage (standard lab supply). A vote showed that AC 100kHz and DC current were liked best; DC voltage (the usual way) was the absolute loser.

The evening of the first day was dedicated to a shoot-out between full-range loudspeaker units. Great fun! A few of the 15 competing pairs were: Goodmans Axiom 80 (UK), Diatone P-610MB (Japan), Altec 755 (US), Fostex 168 Sigma (Japan), and Supravox 215 (France). All were mounted in turn on wooden baffles 1.6m tall and 1.2m wide. Votes were taken after each comparison; the Altec won the finale.

The next day, Australian Allen Wright, who lives and works in Germany (www.vacuumsite.com), gave a short introduction to the new digital formats, followed by a demo of SACD vs CD on one of his modified Sony players. He was followed by transformer specialist Pieter Treurniet, from the Netherlands (www.tribute-audio.nl), who explained the different properties of regular and exotic transformer cores, such as Si-Fe IE, Si-Fe C-core, and amorphous materials. He had brought examples of each, and let us hear the differences. Almost predictably, all votes went to C-core and amorphous, none to the most commonly used type, the IE-core.

The program concluded with a comparison of seven phono preamps, all homemade. Thomas Mayer, who had designed and built two of these, conducted the session. By the way, in the photo, the 1m-high tower with the capped tubes on top is not a power amp, but the power supply of one of Mayer's phono amps. Take a look at his website and be amazed by the elegant and unconventional schematic diagrams (www.vinylisavor.de/ diffphono.GIF). The record player was an old EMT with an Ortofon SPU cartridge.

Mayer put on the first record, and it happened: Gone were the colorations of the horn speakers we'd used for all the previous comparisons. Well, maybe not entirely gone; but 95%, anyway. More to the point, the colorations were no longer obtrusive, as they had been with whatever digital source we'd tried. LP after LP was played, phono amps were switched after every second disc or so, and everyone leaned back and enjoyed the music. No votes were taken in this session, although on some occasions the audience applauded. I can still remember Elvis singing "Fever," and Dave Brubeck's "Take Five" as I'd never heard it before.

There will be a European Triode Festival 2004, again in Langenargen. Maybe I'll schlepg my 50-year-old Vortexion English Army PA amps down there; they're not SE or pure triode, but they do have a Parafed driver stage. I'm sure they'll be liked.

UNITED KINGDOM
Paul Messenger

Speaker designers have long recognized the important role that speaker enclosures play in the total sound of a system, though surprisingly few brands go much beyond hefty wood-based boxes with internal bracing. However, three separate examples that have come my way in the last few months have shown just how much can be gained by reducing "boxiness" by putting much greater design emphasis on the enclosure.

The first of these was the latest, Mk.III version of the tiny but highly regarded Acoustic Energy AE1. Its front baffle is of a solid aluminum alloy 0.4" thick, its enclosure is lined and damped with 0.2"-thick steel plates, and the sides are connected by a tensioned brace. Picking it up is a real surprise—it weighs something like 25 lbs. While
The Gilmore's Sure Do! It's What Great Sound Looks Like

Our thesis is simple. If a speaker is supposed to reproduce recorded bass properly, it should be able to reproduce live bass properly.

So we asked our friend, Abraham Laboriel, who we think is the finest bass player who ever lived, to see if our Gilmore Planar Dipole Line Source could play not just superb detail but superb bass, too!

After some fireworks, the verdict was in. "These are the best live performance bass speakers I've ever heard. Nothing has ever reproduced my unique bass sound as well. How can I get a pair for the road?" An hour later, Abraham was still smiling and groovin'.

Then we played some vinyl and cd's for Abraham. This made him smile, too. "Incredibly realistic and what detail! These are the best home audio speakers I've ever heard. When can I get a pair for my home?"

So, the next time someone tells you that their speakers got bass (and detail too), have your neighborhood bass player try them out. We did!

The Gilmore Audio Speakers are available in over 100 colors. They can be heard at Glacier Audio Home Showrooms and affiliated dealers. Contact us for a showroom near you.
one would expect low box coloration from a luxury tiny such as the AE1 Mk.III, there’s no denying the sonic success of this approach.

The new version of Wilson Benesch’s ACT speaker ups the ante by achieving a similar freedom from boxiness in a much larger, floorstanding design. “ACT” stands for Advanced Composite Technology, and the original ACT One combined curved carbon-fiber composite (CFC) panels with a baffle and central rear spine of medium-density fiberboard (MDF). The latest variation on the theme replaces the MDF with a combination of steel and aluminum up to 18mm thick, in the process increasing the speaker’s weight from 92 lbs to a dramatic 163 lbs. The result is a clear reduction in thickening and boxiness throughout the broad bass spectrum.

The third example is arguably the most interesting of all, as far as the story behind it goes. A year or three back, Derek Hughes, son of Spendor founders Spencer and Dorothy Hughes, was visiting the popular holiday island of Lanzarote, a volcanic pinprick that rises from the Atlantic off the coast of North Africa, where he stayed with friend Steve Lendon, who’d semi-retired there. During the holiday they visited a local attraction, the Green Caves. Being audio nuts, both took note of the strange lack of echo they found in these lava caves. Perhaps due to the porous nature of the rock, the bubble holes trapped within the lava and exposed on the rock’s surface act as little Helmholtz resonators. Whatever the explanation, the rock seemed to have an extraordinary ability to absorb sound, and Hughes and Lendon found themselves thinking about loudspeaker enclosures. The first experiments were promising: Hughes did some work with an accelerometer, and even at its worst frequency, the new enclosure measured more than 20dB better than that of a Spendor BC1. The kernel of Stonic (for Sonic Stone) Audio was formed (www.stonic-audio.com).

Steve Lendon, who has good connections in the Lanzarote building trade, which uses the rock extensively, began working on techniques for building practical enclosures out of the stuff. Derek Hughes went back to England to organize drive-units, networks, and so on. Their first speaker design is a classic large, stand-mounted two-way with an 8" woofer, an internal volume of about 1.5 cubic feet, a front baffle hewn from solid cherry, and a tweeter protruding in a half-nacelle on the top. The rest of the enclosure consists of hefty panels of lava almost an inch thick, fixed within a framework of cherrywood with the traditional glue used on Lanzarote. The bad news is that making a speaker this way is time-consuming and costly, and the result weighs a daunting 77 lbs each.

However, a brief listen quickly revealed the superior performance of Stonic Audio’s unusual enclosure. Box colorations were exceptionally low, and although the speaker was balanced a little on the laid-back side for my taste, the overall sound seemed uncannily “quiet,” with an exceptionally wide dynamic range. Low-level listening was particularly impressive, especially in the way it reproduced delicate acoustic and classical material, and applause.

The quick succession of these three models in my listening room has focused my attention on speaker enclosures. They’re fascinating not only for their vital importance in the sound quality of a system, but also in the considerable diversity of approaches and techniques—of which perforated black lava is the most surprising.
Giovanni Nasta could have been police chief by now. Born and raised in a small village just outside Naples, he made his way north to the city of Treviso, not far from Venice. He became a policeman in a small neighboring town. Gianni is such a warm, generous, funny man that it's hard to imagine his having arrested anyone. With his huge black mustache and his wide smile, he bears a striking resemblance to the young Groucho Marx, except that Gianni's mustache is real.

As a handsome young police officer, Gianni won the heart of Donatella, the police chief's daughter. It may have been his future father-in-law who urged Gianni to follow a different career. Gianni found himself running a disco and then, beginning in 1989, manufacturing loudspeakers. Gianni had found his calling.

There are hundreds of loudspeaker manufacturers, and these days, thanks to computer-aided design, most speakers are quite good. But I notice a certain sameness. Few brands and models stand out from the crowd.

Those made by Opera Loudspeakers stand out. Their sound is very much in the Italian loudspeaker tradition: Tonality is the thing. Opera speakers do well on vocals. And if you get voices right, you get instruments right, too.

"It is the beauty of the sound, the magic of the moment," one Italian manufacturer said to me.

"What kind of wood would you like?" asks Gianni, more down-to-earth. "I can't get it for you if I don't already have it. No exotic or endangered woods, please—only renewable resources."

Last year, along with other members of the hi-fi press, mainly from England, I attended the grand opening of the new Opera factory, in an industrial park not far from Treviso. The well-appointed facility is spacious and up to date. On the second floor, there's a café with a commercial-grade espresso machine and a full bar. A wine collection, too.

"I have all wines delivered here," Gianni said with a wink. "That way, Donatella doesn't know."

"All Italian wines?" I asked.

"Of course. No French wines. Have you seen much French wine in Italy?"

Come to think of it, no.

Unison Research, Opera's sister company, has vacated its old facility outside Vicenza and moved into the new Opera facility. I shall miss being greeted by the porkers who free-ranged next door, although I'm sure the Unison folks don't regret the move at all.

Maybe the late Julian Hirsch was right. Maybe all competent amplifiers do sound more or less alike.

I was working on this month's column when I received a call from another hi-fi manufacturer. This manufacturer is not Italian and—even more relevant—doesn't make speakers.

Speakers are the most important part of the audio chain by far, he told me, as if struck by a sudden revelation. That business about using expensive source components with cheap speakers is rubbish. They've got it backward.

Who's "they"? Ivor Tiefenbrun? John Atkinson? A whole pack of British journalists?

I laugh my evil laugh.

I wasn't taking notes or running the tape, so I can't quote verbatim. But this manufacturer recently attended a demo featuring some very expensive and highly regarded speakers. Those in the room didn't know, but the source was an Apple iPod and the amplifiers were, in audiophile terms, nothing special.

So source components and amplifiers don't matter?

The manufacturer wasn't saying that. But he was saying, very emphatically, that amplifiers matter much less than speakers do. And this manufacturer makes amps, not speakers.

Maybe the late Julian Hirsch was right. Maybe all competent amplifiers do sound more or less alike, and it's a matter of specs and measurements. Why spring for a pair of 30W Jadis JA-30 class-A tubed monoblocks when a 30Wpc Pioneer receiver might do the job just as well?

Just kidding. But it seems to me that there are sometimes BIG differences among the various loudspeakers at a given price, and relatively small differences among various amplifiers. We hi-fi scribblers tend to...well, amplify these differences. If there were no differences, what would there be to write about?

"If you, the reader, can't hear the differences we identify, or you don't consider them meaningful, then so much the better. We have hearing acuity that you don't. Which is why we're hi-fi gurus and you're not." I often think that reviewers are faking it. Don't forget: the more expensive the gear, the more important the reviewer.

I'd better stop before I dig myself in deeper.

I do suggest, though, that you think carefully about the allocation of your hard-earned cash. (It is hard-earned, isn't it?) Maybe you should spend most of your dough on speakers. Maybe you should spend all your dough on a new pair of speakers and keep the rest of what you have. Why be in a rush to redo your whole system? It's not like renovating your kitchen, where you more or less have to do the job all at once.

Buying new speakers and keeping the rest of your present gear gives you a benchmark. Borrow other components from a friend or a dealer. See if you hear meaningful differences. If and when you do, buy—remembering Gertrude Stein: "A difference that's no difference is no difference."

New speakers give the biggest bang for the buck in your system. They can make the most difference in your system for the least amount of money. Attend to the rest of your system later—assuming that your present gear can drive your new speakers. If your old gear can't drive the new speakers, wonder about the speakers.

Which brings me back to Opera Loudspeakers. They're not cheap. There are no budget models with cabinets banged out by machine, finished
in plastic veneer. Every speaker, regardless of retail price, is assembled by hand and finished to the level of fine Italian furniture. Few speaker manufacturers deliver such superb cabinetry. All Opera cabinets are finished on the back as well as on the top, bottom, front, and sides. Corners are rounded. Bella, bella.

All of this wouldn’t matter much if Opera loudspeakers were little more than fine furniture. Such is not the case. The Operas’ cabinets are so beautifully designed and finished that I almost fear an audiophile backlash. But Opera speakers are not all show at the expense of sound.

Giovanni Nasta once explained to me (through an interpreter, so I don’t quote) that he saw no point in making drivers, because excellent drivers are already available from Scandinavia. What an Italian can do superbly well — better, perhaps, than anyone else — is place those drivers in magnificently finished cabinets that even the Danes can’t equal.

**Opera Quinta loudspeaker** ($2995/pair)

I first heard the Opera Quinta — or Opera Five — on my visit to the factory last year. Gianni Nasta has built a superb listening room, far from the noise of the factory, where one can listen at leisure. I arranged for a review pair.

The Opera Quinta retails for $2995/pair in standard mahogany. Light cherry costs slightly more money, while other finishes are available on request (expect some delay and an additional charge). You won’t go wrong with mahogany, which is what I received, but light cherry will darken beautifully and naturally over time. Top and bottom panels are solid wood. Side walls are veneer over MDF. You get a lot for your money with the Quinta — remarkable, given the euro’s recent strength.

The Quinta is a full-range floorstanding speaker 43.7” high by 8.7” wide by 13” deep. The speaker is heavy — 62 lbs, more or less, depending on the type of wood. Each speaker is designed to tilt upward on its spiked feet by about 10°. If you feel you need more stability and possibly a little tighter bass response, optional marble platforms are available.

Every Opera speaker is assembled by hand and finished to the level of fine Italian furniture.

The Quinta is a three-way design with twin bass units. Each 7” doped-paper-cone bass driver is mounted inside its own, separate ported reflex chamber — an arrangement said to provide better speed, depth, and impact than having both bass drivers mounted in a single chamber. Each bass chamber is lined with a layer of lead composite — hence the 62 lbs.

The single 5” copolymer midrange driver is mounted in its own chamber, too. The chamber is sealed, not ported, and lined with “a combed acrylic blanket.” (Sounds like fiberglass insulation to me.)

Gianni didn’t reveal the origins of the bass and midrange drive-units, but I did see boxes around the factory marked “Vifa,” “Peerless,” “ScanSpeak,” and the like. Of course, I didn’t know which drivers went with which speakers. Gianni did say that the Quinta’s bass and midrange drivers are custom-made for Opera. Only the 1” silk-dome tweeter is “off the shelf” — from SEAS, of Norway. The crossovers are at 150Hz and 2.5kHz, and the speaker allows for biwiring or biamping.

I set up the Quintas in my listening room where I thought they might sound best — about 3’ from the side walls and 4’ from the rear walls. The sound was so “right” that I didn’t experiment much with positioning. Besides, these speakers are heavy and hard to grasp. I moved them by gripping one of the front-firing ports — not something I’d necessarily recommend. You really need another person to help move them. It’s too bad my two former hi-fi slaves — my children — no longer reside at home.

For the most part, I used my reference Mac system: McIntosh MCD205 CD changer, C2200 tube preamp, and MC2102 tubed power amp. Analog source was my Musical Fidelity M1 turntable, Ortofon Kontrapunkt B cartridge, and AcousTech PH1-P phono stage. I ran the speakers with their grille covers removed.

The Quinta’s nominal impedance is given as 4 ohms, its sensitivity as 90dB. Opera recommends 30–180W of amplifier power, and they’re happy to supply the amp — sister company Unison Research is under the same roof. Opera and Unison are separate companies, but intertwined.

The Unison Research Unico integrated amplifier, with 80Wpc, did quite well with the Opera Quintas — put it at the top of your list, if you need a new amp. (Most Opera dealers in North America stock Unison, too; they’re both distributed by VMAX Services.) The Unico retails for $1695; add $200 for a phono card. For less money ($995), there’s the Vincent SV-121 line-level 50Wpc integrated amplifier, which is another good choice. (I’ll be writing about the Vincent next month.) Meanwhile, Unison Research has released the Unico Piccolo ($1295, MM/MC phono section included), a slightly less powerful, less expensive tube/solid-state hybrid amp whose prototype I first heard at the factory last year.

**Sens**: The doorbell is ringing. *Pause as Sam bounds up and down the stairs* The Unico Piccolo has arrived, though not
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"A" ttention K-Mart shoppers! America is open for business. With the dollar sinking to record lows against foreign currencies and deficits rising to record highs, overseas buyers looking for bargains flocked to the 2004 Consumer Electronics Show in larger numbers than I've seen since I began attending the show in 1978. I have never seen the Alexis Park Hotel as crowded as it was on the show's first day. Usually, attendance is sparse the first two days as West Coast dealers stay away, preferring to tend to retail business. But this year Thursday was packed, and the following days even more so.

I couldn't tell if I was at CES or the United Nations. The devalued dollar is great news for foreign buyers and American manufacturers, but it's hard on importers of foreign-made hi-fi, and those who try to keep prices low by trimming their profit margins are being hit hardest. They have little cushion to soften rate fluctuations, and can't afford to regularly raise and lower prices to compensate.

Still, there was hardly a sad eye in the house, as business has picked up around the world. The mostly well-heeled buyers of exotic audio toys have more disposable income than ever. As for the rest, let them eat $30 DVD players. As John Atkinson wrote in last month's "As We See It," I walked around the show looking at the many brands and models of everything, asking myself, "Who the hell is buying all this stuff?" But I've seen the same brands at CES after CES over the years; clearly, someone is buying.

Unscientifically speaking, there was more analog at the 2004 CES than at any show since the late 1980s. Playing LPs will persist well into the 21st century, embraced by a new generation of music lovers, is now more than merely thinkable. It's true. Now. Vinyl is back, and with a vengeance.

Over at the main convention center, Denon's Steven Baker showed me the company's new DP500M turntable ($700), featuring a 13" die-cast platter, a neat-looking phono preamplifier based on the 12AX7 tube and featuring 59dB of gain — enough for most moving-coil cartridges. He also pointed out Primare's smart-looking R-20 preamplifier ($695), which a number of readers have told me to check out. I will.

There was more analog at the 2004 CES than at any show since the late 1980s.

"We've sold our entire 500-unit allotment," he said. Over at the always impressive-looking Sumiko exhibit, analog advocate and new daddy Jim Alexander showed me the new Blue Point Special Evolution 3 phonophono cartridge ($349), featuring lower compliance and mass (8.3gm) than its predecessor. The idea was to make it more "friendly" to a wider variety of tonearms. The top plate has been upgraded for greater rigidity, based on the work done designing Sumiko's outstanding Blackbird cartridge. Alexander also pointed out the new Pro-Ject 2 ($500), a neat-looking phono preamplifier based on the 12AX7 tube and featuring 59dB of gain — enough for most moving-coil cartridges.

Alexis Park Congestion

Most of the analog action was at the Alexis Park hotel, and offsite at the THE Show venues, the St. Tropez and San Remo. There was so much to see! Last summer, Dennis Had e-mailed some photos of Cary Audio's upcoming PH302 phono preamplifier, which features four 6SL7 tubes in passive RIAA configuration. Even the PH302's rectification is tube-based (5AR4s), which should keep tube rollers busy. Lundahl transformers are used in the moving-coil stage. I'm scheduled to get a review sample.

New phono preamps used to be merely sprinkled throughout any given CES. This year, it was a deluge. German electronics maker Audionet recently set up Audionet America to import and distribute their line here, including the neat-looking PAM phono preamplifier ($2900), which features single-ended inputs and both balanced and single-ended outputs. The gain is adjustable up to 69dB, with adjustable impedance. An optional outboard power supply, the EPS, is available for improved performance. The build quality of both looked extremely high.

Also from Germany was Clearaudio's new, impressive-looking Balanced Reference phono preamp ($4500), which is fully balanced in and out and is imported by Musical Surroundings. The ASR Basis Mini ($990), a smaller, AC-powered phono section from the company that manufactures the outstanding battery-powered Basis Exclusive phono preamp, is imported by Fanfare International. Yet another German-made phono pre-
Amp was Trigon's Vanguard ($475) with optional Volcano battery power supply ($475), now imported by Immedia.

Immedia also displayed the handsome new wood-cased Connoisseur 6.0P phono preamp (price "around $6000"), which uses some of the same technology incorporated in Connoisseur's far more expensive 3- and 4-series electronics. The 6.0P has 66dB gain, "continuously variable" input loading, and both "flux-busting" and inverted-phase inputs. The companion 6.0L line stage will be introduced soon. Meanwhile, designer Jonathan Carr of Lyra told me that the 4.0P phono and 4.0L line preamps I reviewed last year have been "completely redesigned" and renamed the 4.2P and 4.2L, respectively. Another audition is in the works.

Axis Distribution is importing two new Japanese-built phono preamps from Sound: the PE50 ($500) and the PE100SE ($1000). Each can handle moving-magnet and moving-coil cartridges. Although Dynavector wasn't at CES, they have a new MM/MC phono preamp, the P75 ($595). Thorens introduced their TD85 MM-008 MM phono preamp ($295); an MM/MC version ($395) is in the works.

At the esoteric end of the spectrum was Audio Consulting's Swiss-made Silver Rock phono preamp ($13,200), powered by a lead-acid battery. The minimalist design uses silver-coil MC step-up transformers and features RIAA equalization via resistors and silver-wire inductors, with no capacitors in the signal path.

Ayre Acoustics has joined the analog-enriched with the P-5X phono preamp ($2350), which Ayre says goes well beyond the phono board available for its K-1X and K-3X preamps—and those were pretty good. The P-5X is fully balanced in and out, with up to 70dB of gain in balanced mode. And Pass Labs announced a power-supply upgrade that's supposed to "greatly enhance" their X Ono's already superb performance.

Turntables and Tonearms
I was going to stop by just long enough to say hello to Thorens' American importer, Brian Anderson of Trian Electronics...but he had some new turntables to show me: the acrylic-plinthed TD2030 ($3195) and TD2010 ($2500). These handsome-looking "life-style" designs are meant as much for show as for playing. I'm sure the less expensive TD850, with its MDF-and-steel-sandwiched plinth ($1995 with tonearm) sounds more solid, but in some installations, looks count.

Avid's Conrad Mas showed me the new Avid Diva, an impressive-looking 'table machined of aluminum and stainless steel and featuring a three-point spring suspension, standalone motor, and sapphire main bearing. The Diva's platter is a composite of glass, MDF, and stainless steel. Armboards are easily switched out via a sliding three-rail arm-mount system that's claimed to make setup a snap and permits tonearms of different lengths to be used interchangeably. It's possible to have two tonearms mounted simultaneously, and the disc-clamping mechanism is the same as on Avid's more expensive 'tables. The Diva looks to be a superb design for a very reasonable $2500 (without tonearm). Mas announced the new Avid Reference tonearm ($4000), but didn't have one on hand to show me. He told me that the turntable business is outstanding—he's selling them in Mexico, Iran, and the Far East.

Although Bob Graham was not at the show, he did announce (to me, at least) the Graham Engineering Phantom, a brand new tonearm—not a modification of the 2.2—that should be for sale by the time you read this. The Phantom is said to incorporate patent-pending design elements, about which Graham was excited but mum.

Also brand-new at CES was A.J. Conti's Basis Work of Art turntable ($40,000). (No, the "A" in "A.J." does not stand for "Art," but for "Armando.") Conti was so protective of his new baby that he refused to allow any pictures to be taken! While the Work of Art was undeniably gorgeous, it appeared to include no new technology, looking instead like a more substantial reworking of Conti's Debut model, which itself was superbly built. The Work of Art includes a thicker acrylic plinth, a taller acrylic platter, and a dramatically cantilevered support system of machined aluminum for the hydraulic suspension. The Basis Vector tonearm, which I'm desperate to review, is included with the Work of Art; it's mounted directly on the plinth instead of on the interchangeable armboard used with the Debut.

I also spotted VPI's new Scoutmaster turntable ($2300). This substantially upgraded Scout features a double Scout plinth sandwiching a steel plate, an Aries 2 bearing and platter, a new 300rpm motor, and an integral JMW-9 tonearm. I have high hopes for the sound, and will soon receive a review sample. Also new at CES was Nottingham Audio's compact Dais, which has a massive cast platter. The Dais is available with the 12" Anna arm and electronic power supply ($9499), or armless (a $6000).

Franco Kuzma's captured-air-bearing Airline tonearm (a $7000) is finally finished and available, and it looks gorgeous. I'm sure Rockport's Andy Payor would agree—Kuzma has clearly been inspired by Payor's groundbreaking Rockport linear-tracking design, and probably uses the same machine-tool air bearing found in Payor's arm. Whether or not the Airline can do deep bass is the question I hope to answer when the review sample shows up. At a Classic Records press conference, Classic's Mike Hobson announced that his www. TheMusic.com was taking over American distribution of all Kuzma turntables, tonearms, and cartridges from Muse Electronics.

In another takeover move, Stanalog's George Stanwick
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has purchased Well Tempered, and is to make and distribute Bill Firebaugh’s unique turntable designs—not that Stanwick mentioned it when I ran into him at CES. I found out from speaker designer John DeVore, who had a Well Tempered Turntable in his excellent-sounding room at the outboading THE Show. DeVore is one of the most talented young designers out there today—the sound from his new Silverback speaker ($11,000/pair) was astonishing, as I’m sure whoever is covering speakers will tell you.

Roy Hall introduced two new turntables: the Music Hall MMF-5SE, a special-edition MMF-5 featuring a plinth of genuine wood veneered in walnut, a Pro-Ject 9.1 arm (also used on the MMF-7), and a Goldring G1022 cartridge ($850); and the Goldring GR1 turntable, complete with Goldring Electa cartridge (at $399, final price TBA). The GR1 appears to be an OEM version of a Rega P2 with some nice cosmetics and a free cartridge.

Audionote UK showed a prototype of their Turntable Three Reference turntable (at $19,950 without arm) — just one of many new, high-priced ‘tables at CES. Another was the Spotheim Elba with Lyla arm ($15,900), imported from the Netherlands by Cardas Audio and featuring more metal and less acrylic than Judy Spotheim’s other ‘tables. Expensive turntables from another Dutch manufacturer, Pluto Audio, are now being imported by HighEndAudio LCC. Their $60,000 analog rig consisted of the Pluto 10A Special stainless-steel turntable, which includes a diamond bearing, battery power supply, 12V motor and accessories, 2A tonearm, active Vibraplane base, and a stand. The 10A is not the most or the least expensive ‘table in the Pluto line, which can be seen at www.highendaudio.com/pluto.htm. Also from the Netherlands were Opera Audio and their Reference LP-1.0 turntable ($1899), which features an aluminum plinth, acrylic platter, outboard DC motor and power supply: monofilament drive, and an inverted bearing comprising a ceramic ball and a Teflon thrust plate.

The heavy-metal trend also appeared in the JR Trans-Rotor line, imported by Axiss Distribution. Though Trans-Rotor is best known for its extensive line of acrylic turntables, this year they showed the massive Fat Bob, made of polished aluminum, which features a +60-lb platter and a hydrodynamic bearing. At a very attractive price of $5500 without tonearm, Fat Bob looks like my kind of ‘table. The Trans-Rotor Atlante ($3000) gives you a choice of platter: acrylic, acrylic-aluminum, or all-aluminum (add $600). You can add a second tonearm or up to three motors, and while this is popular in Germany, I think three motors making three times the noise is way stupid. The top Trans-Rotor ‘table at the 2004 CES was the handsome Rock (I thought Townsend Audio owned that name; apparently not), an $8500 model featuring a massive base of shale and a heavy aluminum platter.

I’m not through with turntables yet, or even with turntables from Germany. T+A’s new, belt-driven G 10 ($7000) comes with either the new SME M2 arm or the Rega OEM RB300 with Benz-sourced high-output MC cartridge and build-in phono preamp. It looked elegant and technologically sophisticated. Motor vibration is controlled using digital signal processing, and there are a host of other unique design features that are best discussed in a full review. Also from Germany, Clearaudio’s Robert Suchy showed me the expanded range of Unify unipivot tonearms, now available in 9” ($1200), 12” ($1600), and 14” ($1800) models.

Italian-based Mel Audio Co. enticed potential importers with its full line of equipment, including the elegant-looking GO-EL i (improved) turntable ($5465), featuring a plinth of 20mm-thick leaded crystal and a 44-lb platter made of metacrylate with lead inserts. Add $3500 for the Zeroha II unipivot tone-
arm. UK-based Roksan introduced a new, modestly priced turntable: the Radius 5, in clear Plexiglas, walnut, or maple for $1295, including tonearm; add $300 for Conns Black cartridge. Also new was the long-awaited, triple-plinthed TMS-2, with speed control and DS1.5 power supply ($10,995). Another UK table, and looking impressively built, was the Origin Sovereign with Conqueror arm. In the category of Ultra-Exotic Tonearms was Carlo Morsiani’s C37, a one-piece unipivot design of laquered beechwood ($6500, www.morsiani.it/cm1.html). It was mounted on a Teres 265 turntable with wooden platter ($3800) and battery power option ($115).

Back in the USA, Dr. Andrew Collen, a surgeon with an itch to build a turntable, introduced the Precision VII, a $12,000 'table featuring a 45-lb. brass base and a 3/4” brass armboard. The acrylic platter and bearing system on the VII are from Teres. Another Teres-based ‘table, still in the early stages of development but intriguing nonetheless, spun in the Glass Audio room. The Teres platter-bearing assembly, sitting in a massive carbon-fiber-composite plinth built by Black Diamond Racing’s D.J. Kaser, features a battery-powered motor and Mylar tape drive.

I finally got to meet Kirk and Donna Bodinet, the analog true believers who bought SOTA during the big vinyl flush and are now riding the new analog wave with a refined SOTA line that includes the vacuum-platter Millennia ($7300). It looks far better finished than the one I reviewed during SOTA’s previous incarnation.

There were many more turntables and arms at the 2004 CES—from Amazon, Eurolab, DPS, Acoustic Signature, Tri-Planar, RS Laboratory, and others—but none of them were new this year, though the Tri-Planar’s machining quality has been further improved to “four zero” accuracy ($3900). Also spinning discs was the ELP laser turntable.

At CES 2004, vinyl playback in the demo rooms was the norm. That’s amazing.

Cartridges, Accessories, Software, Good Sound

Lyra’s Jonathan Carr showed me the new Lyra Dorian cartridge ($795), built using the same integrated motor design as the company’s far more expensive models. The Dorian features a boron cantilever and micronidrige stylus, and should be a winner. Carr reminded me that owners of original blue Parnassus cartridges can return them to Lyra so the special magnets can be re-used to build the limited-edition Olympus, which can be special-ordered for $9800. With a returned Parnassus, the cost drops to $7500. I haven’t heard this cartridge, but those who have tell me that it’s absolutely stunning and worth every penny. Of course, such people are very wealthy.

Bob Clarke of Profundo, the Transfiguration importer, alerted me to the new entry-level Aria MC ($1250)— basically, a 0.4mV-output Spirit without the body. Axis’s Art Manzano showed me the new Phase-Tech P1 ($1800), a sandalwood-bodied MC cartridge from Japan. The P1 is built by a gentleman who supplies OEM digital subassemblies to JVC and Sow, but who had always dreamt of designing a
Classical music aficionados know there are literally hundreds of recordings of the Mahler Symphonies. Now, thanks to the vision of Michael Tilson Thomas and the San Francisco Symphony, there is finally a Mahler series that is like no other. These are the first to be recorded originally in multichannel surround sound for release on Super Audio CD (SA-CD). The results are breathtaking.

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cartridge. “Cartridge designers are like movie stars in Japan,” Manzano told me, then raved about the P1’s sound; I hope to soon get one to audition. He also showed me Air Tight’s Emynence cartridge, built by “movie star” Mr. Matsudaira. It features 0.6mV output and uses a hollow aluminum cantilever with a press-fit stylus. Manzano then showed me the new Shelter 90X ($2700), which also outputs 0.6mV. Shelter has been getting quite a buzz lately. Turns out one of their less expensive models is identical to the Crown Jewel Special Edition I reviewed a few years ago.

One of the hottest (literally) accessories at the show was Air Tight’s Disc Flattener (working name), a pants-presser for vinyl (at $1700). Put a warped disc in, close the hatch, turn it on, and the Flattener slowly and carefully heats and flattens the vinyl. And according to Air Tight’s Ron PopeilSan, “It really, really works!” This I gotta try! Mobile Fidelity Sound Lab has brought back the Geodisc, and Pro-Ject has a new, nicely made protractor for setting overhang. Analog sage Wally Malewicz delivered a series of much-needed setup seminars during CES, but I wasn’t able to attend any of them.

Finally, there were the records. The egg is chasing the chicken and the chicken is chasing the egg—meaning that turntable sales are brisk, vinyl sales and new-vinyl production are strong, and there’s no end in sight to the analog tornado. The Alexis Park ballroom was packed with vinyl and vinyl sellers, all of whom report that business is booming. Acoustic Sounds’ Chad Kassem claims he’s had his “best year ever,” as he prepares to issue three new 45rpm titles to finish out his first 45rpm series. His second 25-LP series will include Thelonious Monk’s Monk’s Music in stereo. All 250 subscribers to the first, very expensive ($50/disc) 25-LP series are back for the second; some titles from the first series, including both Bill Evans live sets, are sold out. A few copies of Monk’s Brilliant Corners remain — I urge you to get one. The upcoming Creedence Clearwater Revival LP boxed set, now almost finished, will include a bonus 12” 45rpm featuring “Bad Moon Rising” and “Proud Mary,” in stereo for the first time.

Mobile Fidelity Sound Lab introduced 180gm vinyl editions of Isaac Hayes’ Hot Buttered Soul, Aimee Mann’s Lost In Space, and John Lennon’s Imagine, and there was new vinyl from Cisco, S&P, GrooveNote, and probably others I may have missed.

Classic Records introduced its 200gm S-V-P edition of Crosby, Stills, Nash & Young’s Déjà Vu, claiming to have finally got hold of the original master tape after years of searching and/or begging its possessor to let them have it for a lacquer cut. The cover art, down to the textured jacket, is perfect. (I review the disc’s sound on www.musicangle.com.) Classic also announced the opening of three “shops” on its website, www.TheMusic.com: a new and used vinyl store, an equipment store, and a site that will sell “official bootlegs” Authorized by such artists as Peter Gabriel and The Who. There will also be a bricks-and-mortar record and equipment store in Los Angeles. Classic’s Mike Hobson said the label will issue more new releases in 2004 than in any other year in its history. Along with the Kuzma line, www.TheMusic.com will distribute EuroAudioTeam tubes and analog enthusiast Martina Schoener’s new L’Art du Son record-cleaning fluid, which, Schoener claims, was formulated with the help of chemists, contains no isopropyl alcohol, and is environmentally friendly. It smells good too. Price is $45 for a concentrate that makes a gallon.

I sat down with Speakers Corner’s Kai Seeman for an interview that will appear on www.musicangle.com. “2003 was our best year ever,” he told me. “I didn’t expect it. If you asked me 10 years ago, I wouldn’t have thought I’d be sitting here now saying this.”

Best Sound

Running around looking for analog didn’t leave me much time to actually sit down and listen — ridiculous, I know, but that’s how it was. What did impress me, when I had the chance, were: the Ayre room with Avalon Eidolons; the Balanced Audio Technology room with smaller Avalons; the room shared by CTC, Parasound (JC 1), Rockport (Merak/Sheridan II); the DeVore speaker room; the Glass Audio room with the smaller DeVores; the Herron Audio and Alón rooms, both using Alón’s new Proteus speakers; the Triangle (MartinLogan speakers) and Audio Analog room; the Aerial (20T) and Musical Fidelity (kW) room; and, as usual, the big Wilson Audio X-1 and Halcro bridged dm68 amplifier setup, which was the best big system I’ve ever heard. There were other good-sounding rooms... but now I’m out of room.
One was made to rule them all

"The DALI Megaline speakers redefine the boundaries of the possible in the reproduction of music."

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the ends—literally—of an audio system’s cables, and Denis Morecroft has gone to fairly remarkable lengths to design preamps and amps in which these distortions are vanishingly rare.

To his way of thinking, solid-state circuits can perform better than their tube counterparts, but the transistor’s potential must be exploited to the fullest—and that means the designer must understand and embrace negative feedback. “Feedback was developed in the early 1940s,” Morecroft says, “but what’s never been generally understood is that feedback must be applied with incredible accuracy.

“An amplifier is a device that operates at radio frequencies for its control. Somewhere between 900kHz and 1MHz is the time period for the amp to make a correction around its feedback loop. It seems infinitely fast, but it isn’t.” Interesting enough—but what about conductive metals and eddy currents to do with the correct application of negative feedback?

“Picture a metal heatsink next to a transistor. Now, a fast-moving feedback signal is induced into the transistor—but because this sets up an eddy current in the electrically conductive heatsink, it generates a field that becomes a magnetic brake against the signal itself. In the case of that transistor and heatsink, the heatsink doesn’t move, but the signal and the magnetic field it sets up are always changing.”

In other words, the precise moment at which a music signal needs to travel quickly and without impedance is when it is least likely to be opposed. DNM’s solution was to develop a special coupling heatsink made not from aluminum but from aluminum oxide, which is white ceramic. The new part is very conductive to heat but not to electricity—so the signal is not opposed or distorted through electromagnetic inductance.

**Morecroft’s solid-core cables have been imitated by many of his competitors in the past 20 years.**

Swiss market wanted more DNM products than the tiny English company could actually make.) Those plastic boxes may lack grunt appeal, but their value in the war against distortion is obvious: DNM has now progressed to where even the fixing screws in their casework are made of plastic.

“I know some engineers find it difficult to accept that metal could be a problem. But things go a lot deeper than they realize…”

Deep enough that Morecroft came to reject off-the-shelf capacitors as unsuitable for DNM’s preamps and amps: While other designers were busy looking for the best-sounding caps—a noble enough goal in itself—he set out to design his own. The first result was the slit-foil capacitor, a power-supply cap named for the series of small incisions made in the conductive layers prior to assembly in an effort to break up and prevent the formation of eddy currents. An arguably greater stride came with Morecroft’s invention, a few years later, of the T-Network capacitor, a power-supply cap sporting four electrical terminals instead of just the usual positive and negative. In the T-Network cap, the two plates are tapped not only at their ends but at their centers as well. (Hence the name: picture one of the plates as the top of a letter T) This construction detail helps to guide the current toward separate input and output sides of the capacitor, eliminating the resistance between the charging current terminal and the outgoing current terminal, which otherwise results in unwanted voltage (that pesky Ohm’s Law again). With the resistance shunted away from the “throughput,” the capacitor is allowed to work more or less purely as a capacitor, giving more effective filtering, particularly at high frequencies. DNM’s T-Network capacitor is manufactured in England by BHC, and Morecroft says they’ve already been adopted for use by Rotel and other prominent audio manufacturers. (DIY enthusiasts are welcome to make inquiries by writing to d.morecroft@dnm.co.uk; put “T-Network” s the Subject line.)

Notwithstanding his satisfaction at seeing a DNM invention adopted by other audio companies, Morecroft hesitates to place too much importance on individual parts. “I think it’s a point worth making that many of the effects that we hear in amplifiers, and that we attribute to inserting this or that new bit, don’t really have anything to do with the new part but rather with the fact that the new part has altered, in some way, the manner in which the amplifier functions as a whole. As an example, one of the things we’ve observed with the T-Network capacitor is that, while it improves the filtering—and that’s certainly good—it also changes the overall impedance of the power supply. That itself can even change the open-loop gain of the amp, and some listeners will hear a difference that’s associated with that.

“It’s much the same with cables, isn’t it? Now we have an industry that’s gone horribly wrong—horrible because people are spending millions of dollars on these products—and it’s down to the fact that audiophiles want to look at cables in isolation, when in fact most of what they’re hearing are changes in the amp, when it’s called upon to perform differently.”

Then he adds, “Why isn’t the press writing about this?” But he says it nicely.

**Down the line**

How does someone get started down the road toward skinny cables and plastic amps?

“My background is in mechanical engineering,” says Morecroft, “but I’ve always had an interest in electronics and music. Years ago, I was using a Naim preamplifier and living in the country, way up in Scotland, at the end of the supply chain for electricity. I didn’t
think the preamp was performing as it should, and there were obvious problems with the power supply not keeping up with changes in the delivered AC power. So I had a closer look. Naim, at the time, was using 78-series IC voltage regulators — but then I found the LM317 regulator. I tried it and got very good results with it, and took it around for people to hear…"

That was the start, and by 1978 Denis Morecroft had made his first DNM product: an accessory power supply, soon followed by the first DNM preamp. It wasn’t long before Morecroft had made a name for himself as an audio engineer to be reckoned with; years later, he was invited to join the NXT development team in Huntingdon, Cambridgeshire. But because his work has all been with semiconductors, I wondered if Morecroft had ever been attracted to tubes as amplifying devices — and, in particular, the single-ended triode movement, because so many of his ideas seem to have anticipated it, and because he has long championed low-power amps as superior.

"SETs? I was fascinated by that whole thing. There are good ones and bad ones, of course, and the good ones are superb. Good SETs, with no feedback, have a calming influence on the sound, especially in the highs. There’s a ‘busyness’ to the highs of solid-state amps by comparison, superior though they may be in other ways."

Morecroft says that recent development work at DNM has been partly inspired by his observations of what SETs do well — and this has led him to take a fresh look at the way cables and, ultimately, other components interact with an amp or preamp. "In the context of an audio system, you have things connected to the center of the system through various ports," he explains, "and they will see those ports as reflectors at high frequencies. No matter how good you make your amp, you’re still going to have trouble with all those ports."

"The correction, of course, is to terminate everything in order to match the impedances. You can do that with the cables, as some people have done, but it’s better and more effective to do it at the thing which everything else must match to, which is the amp. The trick is to make the whole amp operate at a constant characteristic impedance." Morecroft’s solution to this challenge — a dual-circuit approach suggestive of a differential pair — will debut later this year in a new version of DNM’s preamplifier, the Series 3D, which will also incorporate new three-dimensional circuit-plotting techniques. (But as the successor to the DNM Series 3C, the new model name is, in Morecroft’s words, "a fortunate coincidence.")

Uniquely — as far as I know — owners of older DNM preamps will have no trouble upgrading to the new one, because DNM is an avid recycler: Buyers of new DNM preamps and amps are guaranteed a certain dollar amount as a trade-in, should they ever decide to move up the ladder. This benefits audiophiles at the top of the food chain, and the krill as well: When older DNM units are traded in, the company tests, re-builds, upgrades, re-tests, and guarantees the units for sale at a lower price, offering them as components in their Start series. "The used-gear approach reflects our total dissatisfaction with how equipment is sold," Morecroft says. "Some poor fellow buys something very, very expensive, and then it goes out of fashion…" Recycling even applies to DNM’s packaging: Preamps and amps are supplied in protective wooden crates, which are returned to the dealer after unpacking — and ultimately used again.

Up the hill
All right, then: You’re a clever designer blessed with the ability to re-think accepted notions. You build your products well, with little regard for convention and no respect for techniques that don’t result in good sound. You design parts that are so good your competitors buy them from you. Your ideas are ahead of their time. And you’re nice to people: No one in the industry has a bad word to say about you. So you’re bigger than Sony, right?

Denis, Morecroft sighs amiably. "People really do believe they need these large cables and large amps, so we’ve got a lot of explaining to do. It’s a continuous uphill struggle…"

"Some people could say we are unnecessarily…complete," Morecroft adds with gentle irony — then pauses, before finishing with another sigh: "I’m prepared to accept that."

Coming next month: DNM’s US distributor, Concert Sound of San Antonio, Texas, is loaning me a full set of DNM electronics and cables. I’ll report on their sound in the May issue. Meanwhile, you can visit Concert Sound at http://cfunkjr.home.texas.net, or call them at (210) 229-1111. DNM’s own website is at www.dnm.co.uk; their phone number in the UK is (44) 1480-457-989.
Batteries On A Cable?

... incredibly simple The world of audio/video cables has long been famous for hype and mystique ... and sometimes for profound and important variations in performance. Into this clutter of both reason and irrationality, AudioQuest introduces a remarkably simple solution to a universally acknowledged problem.

In addition to insulating and protecting a conductor, insulation is also a “dielectric.” While insulating ability is defined by how well insulation can block current, a dielectric is defined by its “permittivity” and “permeability.” These parameters define how much the dielectric material will slow down a signal. Insulation causes “propagation delay” which is measured as a percentage of the speed of light, and it causes “phase shift.”

If all of a signal were slowed down exactly the same amount, the integrity of the signal (and what we hear) would be unaffected. However, when the molecules of an insulating material are electrically unorganized, the time delay caused by the insulation is different for every frequency and different for every signal level. A nearly infinite number of nonlinear phase shifts corrupt the signal’s information content.

This problem of time delay cannot be completely prevented, but the damage it causes can be dramatically reduced. In much the same way that a magnetic field causes a compass to point in a certain direction, the AQ Dielectric-Bias System (patent pending) creates a fixed stable field which electrostatically organizes (polarizes) the insulation. Once organized, the insulation no longer causes multiple nonlinear time delays. Sound appears from a surprisingly black background with much better preserved clarity and dynamic contrast.

The reason your equipment and your cables sound better when you leave the power turned on, or after playing music for a while, is because you are partially biasing the dielectric material present throughout every component. In contrast, AQ’s Dielectric-Bias System (DBS) puts a continuous DC voltage potential (DC bias) between a DBS-only conductor in the cable’s center and an outer shield-like conductor. This keeps a cable’s insulation fully polarized all the time, something no level of signal can come close to accomplishing.

The 12V hardware-store batteries used in the AQ DBS packs will last for years because they are only used to maintain an electric field; there is no closed circuit, no drain on the batteries. A test button and LED allow for the occasional battery check.

The technicalities are complicated, but the DBS solution is remarkably simple and ... incredibly effective.

dbs Audio Interconnect from $300/1m pair
dbs Digital from $325/1m
dbs Speaker Cable from $320/8ft pair
LOOKED AT FROM ONE VIEWPOINT, DVD-Audio and SACD appear to be exercises in sheer profligacy. In the case of DVD-A, why provide a maximum bandwidth almost five times what is conventionally taken to be the audible frequency range, and couple it to a dynamic-range capability far in excess of that achievable by the microphones and preamplifiers used to record the sound? In the case of SACD, why provide a potential bandwidth in excess of 1.4MHz, only to fill more than 95% of it with quantization noise?

These questions have answers, and the topics they encompass are anything but trivial: they relate to fundamental questions about how we perceive sound in general, and reproduced sound in particular. But the subject of this article is not the various justifications for DVD-A and SACD that have been proffered, with which I expect most of you reading this will by now be familiar. For the pragmatic audiophile, it is sufficient, in any case, to know that the best sound from the new high-resolution media is significantly better than the best attainable from CD. No further justification is ultimately required — although many of us would add the rider that it would be rather useful to understand why the sound can be significantly better.

What I want to look at here is more prosaic but nonetheless important: Just what is being delivered on commercial DVD-Audio and SACD releases, and not only from the viewpoint of signal bandwidth? New signal sources, particularly ones with wider bandwidth and dynamic-range capability, present the possibility that the partnering equipment will be stressed in ways it wasn’t previously. These are issues
equipment designers need to know about, and may well have been researched by some of them in the privacy of their own laboratories. But investigation in the audio press has, to my knowledge, been surprisingly thin on the ground. High time, therefore, to knockle down and elucidate just what DVD-A and SACD players are delivering—both good and bad.

First, though, I need to explain the various measurements I've made—of a total of 13 tracks from 15 discs culled from a broad selection of DVD-A and SACD releases—because some of them are certain to be unfamiliar. Please resist the temptation to flick forward to the results until I've had the opportunity to explain their provenance.

SPECTRA

The first set of graphs for each track are spectral analyses of the left- and right-channel signal content. (Only the discs' two-channel stereo tracks were assessed, not the multichannel content where available.) Sounds familiar enough, but there's a twist. Most of the spectral analyses you see published in equipment reviews—showing harmonic or IM distortion residuals, for instance—are averaged, for the very good reason that averaging even out the noise floor. This averaging doesn't lower the noise floor (a common misapprehension), but if sufficient averages are taken, it can reduce the noise floor to a relatively flat line (assuming the noise spectrum itself is flat) with only relatively small irregularities. In this way, low-level spectral features can be identified that would otherwise be obscured within the "grass" of the noise floor.

Averaging is contraindicated, however, when you are looking—as I wanted to when analyzing the DVD-Audio and SACD tracks—for what may be only brief excursions into the high frequencies. For this, you need to capture an "envelope" spectrum—one that plots the maximum amplitude recorded in each frequency bin across the entire duration of the track.

The FFT analysis software I habitually use includes a peak-hold capability that should accomplish this, but, faced with some unexpected results, I decided to write some code of my own. In the long run—i.e., once the software had been written and validated—this DIY approach had the advantage of speed in that one measurement run generated both average and envelope spectra simultaneously, and plotted the results in an enhanced metaline ready for publishing. (Much less tedious than exporting data to the clipboard, pasting it into a text document, importing it into some graphing software, then exporting the graph as a metafile—which is what I'd have had to do otherwise, many times over.)

Figs. 1–3 show examples of the resulting spectra, in this case for 1kHz test tones, which were used to ensure that a 0dBFS signal from the source was recorded at 0dBFS in the hard-disk WAV file (for which purpose a "passive pot" gain control was inserted between the player and computer). To capture 24-bit/192kHz recordings from DVD-A, and anything from SACD, you have no choice but to record from the analog output of the player via the analog input of a 24/192-capable soundcard (in this case, a Lynx Audio L22), because digital output data are not available. At 96kHz or lower sampling rates on DVD-A, you can sometimes access the raw digital data via S/PDIF, depending on whether the player supports 24/96 digital output and whether the disc allows it. In many cases, DVD-A's are coded to force the player to resample its digital output, which of course reduces the bandwidth—and generally introduces distortion.

Where a 24/96 digital output was available from a 24/96 recording I used it, but most of the transfers to hard disk for this analysis had to be done in the analog domain. Because this inevitably adds noise over and above that present in the recording itself, it's important to establish the noise performance of the player and soundcard in combination. Figs. 1–3 do this for the Pioneer DV-939A DVD-A player via its analog output (fig.1); the Pioneer via its digital output (fig.2); and the Philips SACD1000 SACD player via its analog output (fig.3).

The first two graphs were generated using test signals burned to DVD-R using Minnetonka's discWelder Chrome DVD-A authoring software; the third was obtained using Philips' Super Audio CD DAC Test Disc (3122 783 0063 2). In each case, the amplitude of the tone was 0dBFS, the blue line represents the averaged spectrum (over 30 seconds), and the red line the envelope (peak) spectrum. Note that the frequency scale is linear in order to make clearer the spectral content above 20kHz—on a log frequency scale, this part of the spectrum would be squashed up at the extreme right end of the graph. These plots provide a reference against which all other spectra in this article should be compared.

Readers familiar with FFT analysis will additionally want to know the FFT length, windowing, and overlap used for the spectral analyses, for which the respective answers are: 4096 samples, Hann, and 50%. At 192kHz sampling rate, 4096 samples is equivalent to 21 milliseconds (0.021ms), so the envelope spectrum is capable of recording quite short-term features of each file's frequency content. The vertical separation on the envelope and average spectra additionally gives some indication of the music's dynamic range.
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Paul Bolin, Stereophile Magazine

Critics agree: the only serious competition to FOCUS begins at more than twice its price. Bound for Sound proclaimed it “a wonderful loudspeaker that has no competition at its price point,” Sensible Sound also stated “FOCUS is quite possibly the most speaker that can be had for the money.”

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...and they’re some of the most beautiful, as well."

Darryl Wilkinson, Home Theater Magazine

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SLOPE

The third graph in each set will be a complete novelty to most readers. At first glance you might presume it to be a plot of amplitude vs time, just as you would see if you were to view the track in audio editing software (albeit here with the left and right channels superimposed, blue and red traces respectively). But this is actually a graph not of amplitude vs time but of the rate of change of amplitude vs time; i.e., of how rapidly the signal changes from one sample to the next. In less elegant parlance, it depicts the signal’s slew rate.

Slew rate is usually specified in units of volts per microsecond (V/µs), whereas on the rate-of-change graph the vertical-axis units are the equivalent frequency in kHz—a better (i.e., more general) means of expressing the same thing. If the rate-of-change graph peaks at 6kHz, for instance, then the severe rate of change within this track is equal to that of a full-scale sine wave at 6kHz. This figure is calculated by first determining the difference in sample value between adjacent samples and then converting that figure to an equivalent frequency using the equation:

\[ f = \frac{S}{A \times R} \]

where \( S \) is the slew rate in LSB per sample period, \( f \) is the sampling rate in hertz, and \( R \) is the resolution (bit depth) of the WAV file.

If nothing else, the rate-of-change findings for the DVD-A and SACDs analyzed here is of historical significance because of the flurry of interest in amplifier slew rate that occurred during the late 1970s. As readers who were audiophiles at the time will probably not need to be reminded, slew-rate limitations were offered, principally by Walter Jung [and Matti Ojala—Ed.], as one of a variety of explanations for “amplifier sound.”

This was a balloon that, with characteristic pragmatism, Peter Baxandall in the UK set out to burst by the simple expedient of measuring the signal rate of change actually delivered by music LPs (this was before domestic digital audio). Using a simple analog measurement technique of an RC differentiator circuit connected to an oscilloscope, Baxandall was unable to measure a slew rate higher than 0.14V/µs, equivalent under the measurement conditions to an equivalent full-scale frequency (Baxandall referred to it as a critical frequency) of about 2.2kHz. Even allowing for a safety margin,1 any amplifier with a power bandwidth of 20kHz or more—which any amplifier worthy of the description “hi-fi” would be expected to achieve—should cope comfortably.

I’m not aware of anyone having repeated these measurements with CD, although I can’t believe this was never done. The enhanced bandwidth capabilities of DVD-A and SACD offer the possibility that Baxandall’s figure will be comfortably surpassed, and indeed on most of the assessed recordings it is. But even the severest examples, as you’ll see, don’t exceed an equivalent frequency of 12kHz. Moreover, it is clear from the DVD-A rate-of-change graphs (in the SACD ones, the signal’s rate of change is largely swamped by the high level of ultrasonic quantization noise) that the average rate of change is much lower than the peak figure, so for the vast majority of the time an amplifier should be cruising in this respect. In light of these findings, it is difficult to see how an amplifier’s slew-rate capability can have much to do with any sound-quality difference that is persistent rather than, at best, episodic.

POWER ENVELOPE

Fourth and last of the graphs generated for each track picks up on some work I originally did in 2000 for Hi-Fi News, itself a continuation of work begun by NAD in the 1980s. This was the period when a number of manufacturers launched so-called “commutating” power amplifiers, which used switchable voltage rails to provide increased short-term power capability. (The Carver Cube, Hitachi Dynaharmony range, and NAD’s PowerTracker amplifiers all fell into this general category.) These amplifiers’ raison d’être was that reproducing music signals more often requires short bursts of power than the continuous power measured in conventional amplifier tests.2 NAD attempted to quantify this burst power requirement in the form of a “power envelope”—a plot of the required dynamic power capability vs time duration. The result of its experiments was a sigmoid (S-shaped) curve reaching a maximum value of just under 5dB at 20 milliseconds and decreasing to zero at 3 seconds.

NAD’s work was conducted before the tools became available to access directly the data in digital recordings, and so relied on the observation of oscilloscope traces—clearly a less than ideal methodology. By the time I took a belated second look at the issue, this was no longer the case: ripping a CD to hard disk for analysis was dead easy. So I wrote some software to measure the maximum RMS signal amplitude over time frames ranging from 2 milliseconds to 4096 milliseconds (4.096s), across the whole of a sound file. The latter figure may seem an odd choice, but it reflects the fact that the time frames were scaled as powers of two; i.e., 2, 4, 8, 16, 32, 128, 256, 512, 1024, 2048, and 4096ms.

That first piece of power-envelope analysis software was crude, to say the least; it worked with ASCII rather than binary files, and it needlessly recalculated data as a result of analyzing the file over each size of time frame in turn. To apply the same analysis to the DVD-A and SACD transfers, I rewrote the code to read WAV files directly and cut out the duplicated calculations.

Fig.4 illustrates the methodology, using the simple example of a file exactly 24ms in length. First, the RMS level in each of the twelve 2ms frames making up the file is calculated and stored. Then adjacent pairs of 2ms frames are combined to form 4ms frames, for which the RMS level is easily calculated from the 2ms frame data. Note that the 4ms frames are constructed in two ways: the first with no offset from the start of the file, the second with an offset of one of the 2ms frames. Once the RMS level of all the 4ms frames has been calculated, the highest value is stored. A similar process is then used to construct 8ms frames from four adjacent 2ms frames. This time, four 2ms frame offsets are possible: 0, 1, 2, and 3. And so on and so forth, out to the 4096ms frame length in the full analysis.

The power-envelope graphs in this article are calculated in exactly this way, which means—if you haven’t already

1 Walter Jung and others factored this safety margin into their recommendations on the assumption that distortion would begin to rise long before the slew rate limit was reached, a situation that Baxandall pointed out wasn’t necessarily the case. —KH

2 See www.stereophile.com/asweisset/489. —JA
twigged — that they are less than rigorous. Because to be certain that you have captured the highest RMS signal level within each time interval, you need to repeat the above process many times, offsetting the start point by one sample each time through the initial 2ms frame. Only then will every possible time window have been assessed. For a 192kHz sound file there are 384 samples per 2ms frame, so the analysis has to be repeated with 384 different sample offsets.

All the signal data are held in RAM, this doesn't take unfeasibly long. But if you have to rely on virtual (hard disk) memory, it takes an age. The latter was the position I found myself in (yes, you're right—oodles of RAM is high on the shopping list for my next computer), so all the power envelopes for this piece were calculated using zero sample offset only. My defense is that, based on past experience, the errors that result are relatively minor, as I hope fig.5 will persuade you.

This power-envelope graph, like those that follow, has two curves—but unlike them, these do not represent the left and right channels. Rather, these results were both generated from the left channel of "Easy Does It," one of the DVD-A tracks analyzed. Here the blue plot represents the zero-offset data, as you'll find reproduced in the power-envelope graph for this track, whereas the red plot represents a full analysis, assessed over all 192 sample offsets. (This track was transferred to hard disk at 96kHz via S/PDIF, not recorded at 192kHz via the analog route, hence the reduced number of offsets—one reason I chose this track, since it halves the calculation time.) As you can see, the disparity between the two traces is, as advertised, quite small.

What do the power-envelope results mean? Let's perform an example calculation. Assumptions: speaker sensitivity 89dB, 3m (10) listening distance, uncorrelated left and right channels, no room contribution, and a volume setting such that the loudest 4096ms signal segment produces an average sound-pressure level of 100dB. The power output per channel required to achieve this is 57W. To achieve 16dB above this—about the largest 2ms dynamic power requirement identified by my measurements—means the amplifier must be able to deliver 226kW, albeit only over this short time span, in order to prevent clipping. You can chip away at this figure in various credible ways, but the point is made: to achieve realistic loudness levels with many types of recorded music requires substantial reserves of amplifier power—or unusually sensitive loudspeakers. No wonder it is a common reaction to hugely powerful amplifiers that they impart a sense of ease and unfettered dynamic range that lesser amps fail to emulate.

And so we come to the analysis results themselves. Before I invite you to pore over them at your leisure, I should make clear that in two cases I deliberately included notionally equivalent material (Tchaikovsky's Overture 1812 and "Easy Does It") that has been released on both DVD-A and SACD. Although this somewhat reduced the range of material that was assessed overall, I thought it would make for some interesting comparisons—which, now I've seen the outcome, I believe it does. A general note: the narrow spikes visible in the noise floor of some spectra are thought to be caused by interference from the recording/analysis computer and should be ignored.

Keith Howard, for many years editor of the UK magazine Hi-Fi News, is currently Consultant technical editor, Hi-Fi News, Technical consultant, Author, Special contributor, Move Sport, and a contributor to Jazzar Engineering. His website is www.audiosignal.co.uk.

**DVD-A**

**Tchaikovsky: Overture 1812**

Telarc DVD-A-70541

Duration: 15:43

Original recording: DSD

Bit depth/sample rate: 24-bit/44.1kHz

S/PDIF sample rate: 44.1kHz

Stereo track is only 24/44.1 but the rate of change results are not that different to the equivalent SACD, and the power envelope tests the same to within fractions of a dB.
“Why I’m Eating Crow...”

Come on, tell the truth. Don’t you hate it when you find out you were way wrong about something? And you’d argued how you knew you were right?

OK, I admit it. I missed this one. But first, although I’m not making excuses, here’s my side of the story...

I held them back...

Business had been going great. Lots of music lovers were switching to Avantgarde Hornspeakers. So I didn’t want to rock the boat. Meanwhile...

Holger Fromme, Managing Director of Avantgarde Acoustic, kept telling me about their newest project—a huge pair of BASSHORNS. Not only were these BASSHORNS large, they’d be costly to produce.

Holger was making irrational claims too—120 dB at 20 Hz with almost no distortion! Well, as we say down south, I didn’t just fall off the turnip truck...

Hey, I KNEW no one would buy them

Finally deciding to go along with Holger, we brought the BASSHORNS into the U.S., first at Bob Visintainer’s Avantgarde Music & Cinema in NYC, then at our place. Now, we’d see who was right.

At this point, I had to admit that lots of music lovers were checking them out. Way more than I expected. Not long after that, we unveiled them at CES. And, wouldn’t you know it—folks started buying them! Sometimes two or three pairs at a time!

Bad publicity

Already eating massive amounts of crow, I made a huge mistake by going to the HE 2003 in San Francisco, and demoing the TRIO 3.0S and BASSHORNS.

When you’re back-ordered for months, the last thing you want is more fuel on the fire. So imagine how I felt when Robert Harley wrote in the August/September 2003 TAS:

“This over-the-top system was staggering in its resolution, dynamics and musical expression. [At the end of two demos] both times the audience of about 25 people spontaneously burst into applause. In all my years of attending high end shows, I’ve never seen an audience react that way to a demo...Bravo!”

You might as well pick on me too.

Go ahead. Hear the Avantgarde BASSHORNS, with TRIOS or the exciting new SOLOS. You’ll probably want to buy a pair too. If you already have a very high performance loudspeaker, why not take it to the next level by adding the BASSHORN subwoofers?

While you’re about it...

Take advantage of our free InfoPak offer. You’ll get the acclaimed 31 Secrets to Better Sound, Top 150 CD List, literature, and much more. Call the InfoPak Line at 800-944-9537, or e-mail me—Hornguys@aol.com.

Hey, want some sautéed crow? I’ve got plenty...

Best regards,

Jim Smith

It’s About the Music...

Avantgarde-USA LLC
6445 Calamar Drive
Cumming, GA 30040
770-777-2095
InfoPak Line: 800-944-9537
E-mail: hornguys@aol.com
www.avantgarde-usa.com
**DVD-A**

**Walton: Portsmouth Point Overture**
EMI 7243 4 92402 9 2
Duration: 5:33
Original recording: analog
Bit depth/sample rate: 24-bit/48kHz
S/PDIF sample rate: 48kHz

Presumably the analog master still exists yet EMI gives us only 48kHz sampling rate on the stereo track, perhaps as a result of bit budget issues. Unremarkable otherwise.

**DVD-A**

**Frank Sinatra: Sinatra at the Sands** "Fly Me to the Moon"
Reprise 8122 73777-9
Duration: 2:47
Original recording: analog
Bit depth/sample rate: 24-bit/192kHz
S/PDIF sample rate: 48kHz

Although the stereo track is 24/192 this historic recording delivers nothing above 20kHz other than spurious that ought not to be there — did anyone at Reprise check with a spectrum analyser?
You haven't **REALLY** heard your music...

...until you've heard it on **SUPER AUDIO CD**

Experience great music in stunning High-Resolution SR-CD Surround Sound and High-Resolution SR-CD Stereo. SR-CD is to the ears what HDTV is to the eyes. The sound is so superior because the SR-CD sound files are more than four times bigger than those on a CD. The CD was a good idea 20 years ago...now isn't it time for something much better?

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**DVD-A**

**The Eagles: Hotel California**

"Wasted Time"
Elektra 7559-60509-9
Duration: 4:56
Original recording: analog
Bit depth/sample rate: 24-bit/192kHz
S/PDIF sample rate: 48kHz

Surprisingly for a 1970s rock recording, there is spectral content above 20kHz, although it tails off fairly rapidly, and the rate of change peaks at around 5kHz.

---

**DVD-A**

**The Ray Brown Trio: Soular Energy**
"Easy Does It"
Hi-Res Music HRM 2011
Duration: 3:59
Original recording: analog
Bit depth/sample rate: 24-bit/96kHz
S/PDIF sample rate: 96kHz

Broadly similar results to the equivalent SACD (see later), notably in the power-envelope test.
The Conga Kings: “Tumbao de Tamborito”
Chesky CHIDVD221
Duration: 6:24
Original recording: 24-bit/96kHz
Bit depth/sample rate: 24-bit/96kHz
S/PDIF sample rate: 48kHz

Clear evidence of music content to above 50kHz, suggesting that Chesky used microphones with unusually wide bandwidth. Challenging power envelope too.

The Latin Jazz Trio: The Latin Jazz Trio “Mujaka”
AIX Records AIX 80011
Duration: 9:39
Original recording: 24-bit/96kHz
Bit depth/sample rate: 24-bit/96kHz
S/PDIF sample rate: 96kHz

Again, music content to over 40kHz, primarily as a result of Luis Conte’s tinkling percussion, which also results in the short-lived excursion to 6kHz in the rate-of-change graph.
The Rebirth of Cool.


To find out more about the new Kaya Reference, go to www.innersound.net/kaya.html or call 720.210.1925.
**DVD-A**

*Steely Dan: Everything Must Go*  
"Slang of Ages"  
Reprise 9362 48435-9  
Duration: 4:14  
Original recording: 24-bit/192kHz  
Bit depth/sampling rate: 24-bit/192kHz  
S/PDIF sampling rate: 48kHz

Evidence of spectral content reaching out to 50kHz or so, and the rate-of-change graph relentlessly reaches around 3kHz, peaking at over 6kHz.

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**SACD**

*Tchaikovsky: Overture 1812*  
Telarc SACD-60541  
Duration: 15:44  
Original recording: DSD

Broad peak around 40kHz in the envelope spectrum is odd but the cannon are responsible for some champion rate-of-change spikes.
The Rebirth of Cool.


To find out more about the new Innersound Reference line, go to [www.innersound.net/reference.html](http://www.innersound.net/reference.html) or call 720.210.1925.
SACD
The Ray Brown Trio: *Soular Energy* "Easy Does It"
Groove: Note GRV1015-3
Duration: 3:59
Original recording: analog

Much the same results as its DVD-A equivalent, as already noted, but the ultrasonic quantisation noise adds to the rate of change.

SACD
*Opus 3 Showcase* "Blues Opus 3"
Opus 3 CD-21000
Duration: 4:34
Original recording: analog

Narrow peak at around 55kHz in the envelope- and average spectra is repeated by the Steve Davis and Clark Terry discs, otherwise unexceptional.
SACD

The Steve Davis Project: Quality of Silence “One Two Free”
DMP SACD-04
Duration: 3:46
Original recording: DSD

Davis’ percussion sends the envelope spectrum to beyond 40kHz, but how far beyond is impossible to say because it’s swallowed up in SACD’s shaped quantisation noise.

SACD

Alison Krauss: Forget About It
“Forget About It”
Rounder SACD 11661-0465-6
Duration: 3:28
Original recording: PCM

Clearly a 48kHz PCM original, so the spectra plummet above 23kHz—not an obvious candidate for SACD release, I’d have to say.
Proven Improvement

Every aspect of sonic improvement can be verified and measured in an Analysis Plus cable.

No magic boxes or unheard of materials — only scientifically proven methods.

Trust your brain and engage your ears.

Scientifically Verifiable Quality

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SACD
Diana Krall: The Look of Love
"Dancing in the Dark"
Verve 589 597-2
Duration: 5:48
Original recording: DSD

Plenty of spectral content above 20kHz, probably with an occasional excursion above 40kHz but again it's overwhelmed by quantisation noise, as is the rate of change.

SACD
Clark Terry & Max Roach: Friendship "Simple Waltz"
Eighty-Eight's VRGL 8805
Duration: 3:08
Original recording: DSD

Roll-off in the envelope spectra beginning above 20kHz suggests this was recorded with large-capsule studio microphones, so the ultrasonic content isn't all it might have been.
In its December 2003 issue, Stereophile recognized components that proved capable of giving musical pleasure beyond the formal review period by naming its “Products of the Year.” To be a contender, a product had to have been reviewed in Stereophile between the November 2002 and October 2003 issues, in a full Equipment Report, a “Follow-Up” review, or in Sam Tellig’s, Art Dudley’s, John Marks’, Kalman Rubinson’s, or Michael Fremer’s regular columns. All the reviews mentioned are available free of charge in the www.stereophile.com “Archives.”

The awards were presented at the 2004 International Consumer Electronics Show in Las Vegas by Stereophile editor John Atkinson, with the assistance of advertising manager Keith Pray, contributing editor Wes Phillips, and the magazine’s web-master Jon Iverson. The photographs were taken by JA.

**LOUDSPEAKER of 2003 and 2003 PRODUCT OF THE YEAR**

**DIGITAL SOURCE COMPONENT of 2003**
dCS Verdi—Purcell—Elgar Plus SACD/CD playback system ($33,985; reviewed by Michael Fremer, Vol.26 No.4, April 2003)

**ANALOG SOURCE COMPONENT of 2003**
SME Model 30/2 turntable ($25,000; reviewed by Michael Fremer, Vol.26 No.3, March 2003)

**JOINT AMPLIFICATION COMPONENTS of 2003**
Linn Klimax Twin power amplifier ($8995; reviewed by Art Dudley, Vol.26 No.6, June 2003), Parasound Halo JC 1 monoblock power amplifier ($6000/pair; reviewed by Michael Fremer & Sam Tellig, Vol.26 Nos.2, 6, & 12, February, June, & December 2003), and VTL TL-7.5 Reference preamplifier ($12,500; reviewed by Paul Bolin, Vol.26 No.10, October 2003)
Back in the 1970s, there wasn't much they couldn't do: Pour on the volume and they didn't distort. Leave 'em baking in the sun on a car's back deck and they still played like champs. Best of all, hot sweaty hours full of sweet talk, glandular logic, and, finally, abject begging could pass, and, being a loop, they just kept on a-playin'. Babies were conceived, moon landings were ignored, and a presidential resignation meant little when you were funkin' to the soothing tones of the mighty 8-track. During its brief, cheesy reign, the 8-track even managed to play a part in the demise of a little West Texas band called The Flatlanders.

For eight years in the '70s, the chief "lost" artifact of Texas music was that band's sole album, featuring Joe Ely, Butch Hancock, and Jimmie Dale Gilmore. The Flatlanders were
filled out by fiddler Tommy Hancock (no relation), mandolin player Tony Pearson, and string bassist Syl Rice. And just for fun — the kind of only-in-West-Texas fun that makes Larry McMurry’s novels so memorable — the band included a musical saw played by a carpenter, Steve Wesson.

The story went that these friends, who’d grown up in Lubbock together a generation after the death of local legend Buddy Holly, had first made demos, then in 1972 an album, for the Sun label (yes, that Sun) that was years ahead of its time — a blend of acoustic country, rock’n’roll, and folk that contained Gilmore’s song “Dallas” (a later hit for Gilmore and Ely, among others), and which was released on a Sun affiliate, Plantation. Trouble was, few people other than truckers had ever actually seen a copy. The damned thing was only ever released on 8-track.

“The real icing on the cake was when we finally got a copy of the 8-track, I thought that was the icing,” says Hancock. “But when Joe tracked down an 8-track player and we played it, that sealed it perfectly. It was not us, it was Jeannie C. Riley with our picture on the cover.”

“They pretended to release it,” says Gilmore. “Total ripoff!”

“That first record, even though we love it musically, we’ve never felt connected to it,” Ely adds. “It was never ours. We never got paid for the sessions. We never received any royalties. We never thought of ourselves as the Flatlanders. We just thought of ourselves as each other.”

Although, by Ely’s estimation, about 50 singles of “Dallas” were pressed, along with another “20 or 30” of a cover of “Jolie Blon,” the album, originally titled Jimmie Dale and The Flatlanders, remained unreleased until an English deejay and several UK-based writers flew over the pond to strike a licensing deal with the owner of the master tape. It was finally released on vinyl by UK-based Charly Records as One More Road in 1980, in part because Ely had toured the UK with The Clash. Ten years later, Rounder Records gave the storied session its first, albeit truncated, US release under the apt title More a Legend than a Band.

Looking back, Hancock says, “It was a realization for us that the music industry was really a different entity than what human contact should be.”

“We were not only noncommercial, we were anticommercial,” Gilmore continues. “We weren’t very disappointed because we didn’t have many expectations to begin with. It’s funny, the whole thing was an old fluke. The very fact that we got the record made somehow doesn’t make sense.”

What immediately made sense to fans of the trio’s subsequent solo careers is that, instead of the guest shots they'd been doing on each other’s albums and shows ever since the Flatlanders, someday, somehow, there would be a genuine reunion. That hope burst into bloom two years ago when the band released Now Again, an event followed in January 2004 by the release of their second reunion album, Wheels of Fortune.

How the Flatlanders got back together was a little unlikely — not surprising, considering their history.

“We all hang out together, we always have, so there wasn’t a reunion in that sense,” Gilmore begins. “But Joe was workin’ with Tony Brown in Nashville, and somebody from Robert Redford’s world asked Joe to do some music for The Horse Whisperer. Then somebody involved in Robert Redford’s group turned out to be a Flatlanders fan. So they suggested, ‘Well, I saw them yesterday.’”

Once reunited, the old buddies recorded Now Again and signed with an independent label, New West Records, which is based in Los Angeles and Austin.
Since their Flatlander days, all three have fashioned successful solo careers, in large part singing and playing each other's material. Joe Ely, 56, whose latest album, Streets of Sin, was released on Rounder in July 2003, has had the most visible success. A rambler who at one time literally ran off and joined the Circus, Ely returned to Lubbock and formed a band in the mid-70s. His early albums, such as Joe Ely (1977), Honky Tonk Masquerade (1978), and Down on the Dog (1979), were mixtures of rockabilly, Tex-Mex, and honky-tonk country—but soon rock'n'roll, complete with a genial outlaw stage persona, became Ely's forte. Some of his best-known original songs include "Are You Listening Lucky?," "Cool Rockin' Loretta," and "Drivin' to the Poorhouse in a Limousine."

By the time he toured Europe opening for the Clash (the result is the 1980 live album, Live Shots), Ely was a full-on, black-leather-clad rocker who made women swoon and whose band always came equipped with a nasty, topnotch guitar slinger—Jesse Taylor, Dave Grissom, or Ian Moore. Live at Liberty Lunch (1990) captures Ely at his rockin' peak; the following album, Love and Danger (1992), is perhaps his most accomplished studio work. Since then Ely has turned down the volume, preferring an ever more acoustic slant.

If Ely became the rocker of the trio, then Jimmie Dale Gilmore became its Zen master. After spending the late 70s in an ashram in Colorado, Gilmore, who is now 58, and his distinctive nasal croon returned to Austin and began playing the clubs before cutting his first solo albums, Fair and Square (1988) and Jimmie Dale Gilmore (1989). After a Nonesuch album, After Awhile (1991), and a pair of superb Elektra albums, Spinning Around the Sun (1993) and Braver New World (1996), Gilmore started his own label, Windcharger Music, struck a distribution deal with Rounder Records, and released the finest album of his career, One Endless Night (2000).

Arguably the most prolific songwriter of the three—and the crookiest singer—Butch Hancock, 58, was also the most shy when it came to the music business and the price of fame. The author of "If You Were a Bluebird," "She Never Spoke Spanish to Me," and "West Texas Waltz," he is also the most accomplished wordsmith among the three. From 1978 until the present Hancock has released much of his material on his own Rainlight Records, which continues to keep most of his catalog in print. In the early '90s he signed with Sugar Hill Records, who released three albums with fuller arrangements, on which Hancock was often accompanied by a band. Among his many talents (river guide, architect), Hancock is also a painter; for a time in the '90s, he ran an Austin gallery called Lubbock or Leave It.

The tour for the Flatlanders' Now Again was a decided success, and aided by the reputation all three had as solo artists, it also sold well enough to force them to make a decision about continuing.

"We had actually become a band, and there was good energy going," Ely says. "I didn't want to let that go. We recorded [Wheels of Fortune] over a period of just a few days, not thinking it was a record, just stuff we wanted to hear back."

"There was no rule besides we liked the song," Gilmore says. "We had a list of another 20 or 30," Hancock adds.

"Twenty or 30?" Ely grunts. "More like 60 or 70. If we'd have sat down to co-write it would have taken another year and a half, two years.

"People who are just starting out have to really struggle to find 12 songs to make a record. We peeled away and looked through the vines and we said 'Wow, there's a great record inside here.'"

Musically, this record mixes all the creative streams that have flowed into and from each man's solo career. While the Beatles, Hank Williams, Santiago Jimenez Sr., and Lightnin' Hopkins are all shades in each man's songwriting, what comes out is it's own color; hard to define, except to say that it's very typical of an Austin music scene that also produced another similarly eclectic talent, the late Doug Sahm. Loosely speaking, Hancock's "Wishin' For You" (sung by Gilmore) is Austin cosmic cowboy troubadourism, Gilmore's "Midnight Train" (sung by Ely) is electric blues rock and Ely's "I'm Gonna Strangle You Shorty" is honky tonk swamp pop. Even a straight ahead rocker like "Go To Sleep Alone" has a Tex Mex accordion in the background.

From reviews and fan reactions, it's clear that listeners find Wheels of Fortune "slicker," more "polished" than Now Again.
They say that knowledge is power. So when it comes to reacting to the constantly fluctuating power needs of today's loudspeakers, an A/V receiver has to be very smart indeed. Big dynamic swings from exploding planets and earthquaking bass drums give your system a lot to think about.

But a lot of wimpy A/V receivers fail the test. And when their numbers don't add up, you get distortion. At NAD, we deliver honest, effortless sound thanks to our exclusive dual-rail power supply that knows when speakers need some extra help—a textbook case in effective distribution of power we call PowerDrive™.

PowerDrive™
All NAD A/V receivers and amplifiers with PowerDrive™ are unsurpassed in delivering a clean, undistorted signal. Unlike many of today's A/V receivers which, frankly, do not make the grade, NAD's PowerDrive™ systems will continuously drive the most demanding speaker loads at full bandwidth, at rated power, with all channels driven simultaneously. The result: honor roll performance for your movies and music.

NADelectronics.com/power
Do your homework. Study up on NAD's PowerDrive™ systems for yourself. For your nearest NAD dealer or more information on the real world performance of NAD's PowerDrive™ systems please visit the web address above.
They're nothing more than air molecules moving backwards and forwards. They can't be seen. They can't be touched. But they succeed in creating music, moods and feelings in you.

A tango in Buenos Aires, a brass band in Manchester, drums from Osaka. The journey's just beginning.

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Smartketing, 6555 Saint-Denis Street, Montreal, Quebec H2S 2S1 Canada 514.279.6006 or visit www.cantonusa.com
Shaking their heads as if they've heard this before, the three friends try to explain.

"It's just simple. I wanted to boil it down to its simplest... Don't play anything that's not absolutely necessary," Ely says. "There's this mystique that says you should get it on the first take, just thrash it out, hit wrong chords, and I don't like to listen to those records."

"This is apropos of all that," Hancock says, "One time Stevie Ray said, 'You know what I love so much about Jimmie [Vaughan]'s playing? He knows what not to play.'"

"Right," Ely agrees. "Young bands try to fill up every space. We try to create space."

One thing you happily do hear on Wheels of Fortune is Steve Wesson's musical saw, which, as it was on Now Again, is back for a repeat performance.

"Back in the old Flatlanders days we could actually say, 'Hey Steve, hit a G for us,' and we'd tune our guitars to it," Hancock says. "It sounds like those old high line wires" (he whistles) "or a UFO or something."

"He actually does high-end cabinetry now," Gilmore says. "Yeah, he's taken the saw to all extremes," Ely deadpans.

Simple or slick, cabinets or wires, recent roadwork or just a lot of years together, Wheels of Fortune has a wisdom, a spirit, that comes, according to the band, from the telepathic understanding among three old friends. That quality is especially apparent onstage, when just a nod of the head or blink of the eyes changes the song they're singing or calls the next tune. According to all three, the recording process for Wheels of Fortune went much the same way.

"Between us there's some kind of spark happens when it's gonna work," Gilmore says. "We agree on it without saying so. You can just tell."

"There's an unspoken language," says Ely. "We don't always have to communicate verbally. It's kind of in the air, you know."

"Whenever I read your mind, I'm always surprised," Hancock says grinning.

Another key to the reunion's success, one that's very obvious when the group is interviewed together, is the lack of ego each has brought to the project.

"The only arguments we had about it was someone sayin', 'My ego's smaller than yours,' says Hancock, to knowing laughter from the others. "We still haven't got that settled yet."

"For some unknown reason," Gilmore says, "it seems like we brought that [attitude] out in each other from the beginning."

In songs such as "Midnight Train" and "Deep Eddy Blues," two older tunes by Gilmore, the music on Wheels of Fortune looks back toward the roots of the bandmembers' musical pasts—but, in the spirit of revival that pervades the album, it also shows the way forward. It's in that spirit that these three lifelong friends have begun thinking about their next album, writing songs for each other, just as they always have.

"Inside of each person, when you sit down by yourself to write a song," says Ely, "some voice, the alter ego or whatever, always tells you when a verse is not right."

"There's at least one of those, or maybe several, arguments going on," Hancock continues. "So it's like every one person is really several people trying to work out a song. For some reason, we suddenly got all that right, like there's another creature right out here who's writing the song."

"So with one song," says Ely, "[between the three of them] there's somewhere between six and twelve people actually writing the song. It's a damn miracle, really."
Each listing—in alphabetical order within classes—is followed by a brief description of the product's sonic characteristics and a code indicating the Stereophile Volume and Issue in which that product's report appeared. Thus the September 2003 issue is indicated as “Vol.26 No.9.”

Some products listed have not yet been reported on; these are marked (NR), for “Not Reviewed.” We recommend that you read any product’s entire review before seriously contemplating a purchase (products without reviews should therefore be treated with more caution)—many salient characteristics, peculiarities, and caveats appear in the reviews, but not here. To obtain back issues of the magazine, visit our website: www.stereophile.com. We regret that we cannot supply photocopies or e-mail copies of individual reviews. Some reviews are reprinted in our website “Archives” Section; these are marked “WWW.”

More are added each week, so check the on-line listing. PDF files of past listings are also available for purchase. Each 39.95 file includes a complete year’s worth of “Recommended Components.”

In general, components do not remain listed for more than three years unless at least one of the magazine’s writers and editors has had continued experience with them. Discontinuation of a model also precludes its appearance. In addition, though professional components—recorders, amplifiers, monitor speaker systems—can be obtained secondhand and can sometimes offer performance that would otherwise guarantee inclusion, we do not generally do so. Stereophile’s “Recommended Components” listing is almost exclusively concerned with products currently available in the US through the usual hi-fi retail outlets.

**How Recommendations Are Determined**

The ratings given components included in this listing are based entirely on performance—its accuracy of reproduction—and are biased to an extent by our feeling that things added to reproduced sound (e.g., flutter, distortion, colorations of various kinds) are of more concern to the musically oriented listener than are things subtracted from the sound (e.g., deep bass or extreme treble). On the other hand, components markedly deficient in one or more respects are downrated to the extent that their deficiencies interfere with the full realization of the program material.

We try to include in “Recommended Components” every product that we have found to be truly excellent or that we feel represents good value for money. Bear in mind that many different tastes are represented. The listings are compiled after consultation with Stereophile’s reviewing staff and editors, and taken into account continued experience of a product after the formal review has been published. In particular, we take account of unreliability and defects that show up after extended auditioning. The fact that a product received a favorable review cannot therefore be regarded as a guarantee that it will continue to appear in this listing.

The prices indicated are those current at the time the listing was compiled (February 2004). We cannot guarantee that any of these prices will be the same by the time this issue of Stereophile appears in print.

Where we have found a product to perform much better than might be expected from its price, we have drawn attention to it with a $$$ next to its listing. We also indicate, with a $, products that have been on this list in one incarnation or another since the “Recommended Components” listing in Vol.24 No.6 (April 2003).

Longevity in a hi-fi component is rare enough that we think it worth noting (although it can also indicate that the attention of design engineers has moved elsewhere).

We are not sympathetic toward letters complaining that the Symphonic Bombast A-123 that we recommended heartily two years ago no longer makes it into “Recommended Components.” Where deletions are made, we endeavor to give reasons (there are always reasons). But remember: Deletion of a component from this list does not invalidate a buying decision you have made.


**Turntables**

**A+**

Rockport Technologies System III Sirius 573,750

What can you say about a $73,750 "table and arm? The System III Sirius is all air-driven, exquisitely constructed, and sorts its needles with a "captured" mechanical-tracking, high-pressure, low-friction arm and bearing. It took all of 30 records for MF to realize that "it was in every way laughably better than anything else I've ever heard." How so? "Its overall presentation was so much bigger, more focused, solid, three-dimensional, sure-footed, dynamic, and seamless, that I lost my footing. Literally I was floored!" It merits the LP’s highest praise, "puts the stylos on a straight and true path across the record surface, while allowing for precise adjustment of all parameters, which it then reliably holds indefinitely."

**How to Use the Listings**

The classes cover a wide range of performance. Carefully read our descriptions here, the original reviews, and (heaven forbid) reviews in other magazines to put together a short list of components to choose from. Evaluate your room, your source material and front-end(s), your speakers, and your tastes. With luck, you may come up with a selection to audition at your favorite dealer(s). “Recommended Components” will not tell you what to buy any more than Consumer Reports would presume to tell you whom to marry!

**Class A**

Best attainable sound for a component of its kind, without any practical considerations; “the least musical compromise.” A Class A system is one for which you don’t have to make a leap of faith to believe that you’re hearing the real thing. With Super Audio CD, 24/96 DAD, and DVD-Audio now available, we have created a new Class, A+. For the best performance in those digital categories, Class A now represents the best that can be obtained from the conventional 16/44, 1kHz CD medium. We also created a Class A+ category for turntables, to recognize the achievement of the Rockport Sirius.

**Class B**

The next best thing to the very best sound reproduction; Class B components generally cost less than those in Class A, but most Class B components are still quite expensive.

**Class C**

Somewhat lower-fi sound, but far more musically natural than average home-component high fidelity; products in this class are of high quality but still affordable.

**Class D**

Satisfying musical sound, but these components are either of significantly lower fidelity than the best available, or exhibit major compromises in performance—limited dynamic range, for example. Bear in mind that appearance in Class D still means that we recommend this product—it’s possible to put together a musically satisfying system exclusively from Class D components.

**Class E**

Applying only to loudspeakers, this “Entry Level” classification includes products that may have obvious defects, but are both inexpensive and much better than most products in their mid-fi price category.

**Class K**

“Keep your eye on this product.” Class K is for components that we have not reviewed (or have not finished testing), but that we have reason to believe may be excellent performers. We are not actually recommending these components, only suggesting you give them a listen. Though the report has yet to be published in certain cases, the reviewer and editor sometimes feel confident enough that the reviewer’s opinion is sufficiently well-formed to include what otherwise would be an entry in one of the other classes, marked (NR).
Avid Acustic: $12,000

Based on a main chassis that includes three springs, suspension covers and a cast-aluminum sub-chassis, the Acustic built with the "renewably rigid but not critically damped" MF. "The theory behind all of this is to reduce all vibration in the cabinet to a minimum so that the entire enclosure can be both "renewably rigid but not critically damped," with the entire enclosure being so rigid that the lowest fundamental mode is beyond the range of the human ear to detect. It's a long-winded, but startling, lesson in the use of damping and mass..." (Vol.23 No.8). 

ELP LF-2XC: $14,300

Used a five-layer pickup to remove and transmute the groove information via a series of mirrors and lenses. Use is akin to that of a CD player, complete with the ability to scan, skip, and random play. The ELP would not play perfectly; it has an extraneous light at the center of the light path, which would not play exactly the same. Laser pickup was also unable to distinguish groove modulations from dirt. "Records that sounded dead quiet on a conventional turntable could sound as though I was running potato chips, said MF, a record-playing machine is mandatory. The overall sound was "both softer and sweeter than playback-by-styling," with the "most natural sound response of any electronics in the market." (Vol.23 No.8) Simon Yorke Designs Series 7 Precision Analogue Disc Transcription System: $12,500

This built-to-order behavior, precision tonearm is an MF's current reference — and that of the Library of Congress. MF: "The complete system is a formidable analog playback system, a world-class example of what both mechanical and sonic art that's hard to fault. It provides a gloriously extensive, always musical sound — a superbly balanced sonic picture that combines depth, tightly focused bass...with extended, detailed edge and end-free high frequencies devised with the greatest care. There's a word for it: "fini" — about the Yorkies; it just sounds musically "right" whether handled hard rock or 'Lercher. Sempigrillo's "Analogue Component of 1998" Package including Active Vibrationpile: $11,500 (Vol.21 No.6)

SME Model 30/2: $25,300

In addition to audio engineering, SME also does precision CNC machining and measuring for Formula One race cars and for the medical, aerospace, and aviation industries. That prowess was evident in their Model 30/2, according to MF: "a testament to the pure, uncompromising pursuit of perfection among the rare components. SME's flagships turntable makes every other design I've encountered...with the possible exception of Rockport's System III Sirius — look almost homemade...I didn't think anyone else building turntables today is capable of this level of craftsmanship. I've never seen anything like it..." (Vol.21 No.6). The SME Model 30/2 precision-machined parts, its superb damping and isolation, its high-mass, low-inductance, and a stable drive system, and of, most of its sound or lack thereof, might just make it "the best turntable ever made. What it does not do is sound Nordic. Milford preferred the Graham 2.2 arms with the 30/2 in-house styli, rather than SME's own Model IV/VI. Simplified's "Analogue Component of 2003" (Vol.26 No.3/WWW) VPI TNT Mk. V: $6000

Modular design allows owners of older models to upgrade, or add new components, to the system. VPI added tonearm and USDC cartridges to the TNT Jr. and upgrade as finances allow. Strictly on the

warm side of neutrality, MTM V: big, full, weighty, and rich. The 4-ohm impedance of the speaker's cabinet slightly reduced the volume, but the sound was still perfectly balanced. The cloud of noise that accumulated on a typical $1000 (MTM) amp ($595) existed for the most part, feels FM. MTM enthusiastically agrees: "Clears the burdens of a Breuer with the structural integrity of the Brooklyn Bridge." (Vol.25 No.11)

VPI Bellissimo HR: $6000 tonearm & belt drive, piston-inset suspension. "With its simple suspensionless construction, you can have this "table up and running in just a few minutes," said MF. "Absolutely magnificent piece of gleaming industrial architecture," MTM adds, "you value tight focus, sails, bass control and weight, cleanly sharpened 'edge,' black backgrounds, and relentlessly 'right' rhythmic performance, and are willing to give up a bit of the airy, floty sound and richness in the midrange..." (Vol: 25 No.11)

SOTA Aries Mk. 3: $10,000 — without arm, $6250 with SME 51IV/tonaire (see "features," $3850. (Vol. 23 No.4 WWW)

SOTA Cosmos Series III: $5520

Incorporates the same drilled-out and damped sub-chassis of solid aluminum at the $7500 Millenias and uses a new 24-pole stepper motor with a synthesized sine-wave power supply. Numerous improvements have also been made to the vacuum system and external power supply. "With the new motor and power supply, issues of speed stability and noise have been greatly improved. The Cosmos has the biggest tonearm of the mechanical sub-chassis, solid-damped aluminum structure that produces a very, very loud, very solid, and with good rhythm..." (Vol.25 No.8)

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RECOMMENDED COMPONENTS

Music Hall MMF-5: $1695
Uses the same Pro-Ject tonearm, inverted bearing, oblong motor, and square drive belt as the Music Hall RM-9. MF: "The MMF-5 is a far more harmonic and elegantly finished turntable, and adds more features at no extra cost to the basic components of the RM-9.$1500 too, resembles the RM-9's: "nights, fast, and punchy, and not because it ran a bit fast..." But I found myself wanting a little more richness. I felt the MMF-5/Maestro's sound, like the RM-9, was somewhat clinical." (Vol.26 No.8) Music Hall MMF-7: $1199, with tonearm and cartridge
With the MMF-7's split-plinth, freestanding motor, Pro-Ject 9 tonearm, and Golginga Enrica H cartridge, "Roy Hall has painted his masterpiece," MF declared. Though he found the overall sound to be a bit too warm and rich, it was "a true hi-fi tonearm." The kid's somewhat priced, well-balanced product that will deceive you into thinking you're getting it all." He recommended using a Ringmaster in place of a felt mat to gain greater midrange control and tonal neutrality. Bonus: Semikron's tone arm now comes with the RM-9.

Nottingham Analogue Horizon: $1199
The Horizon, Nottingham's least expensive turntable, resembles a stripped-down version of their most expensive model, the AnnaLog. It has a hefty cast-iron base and uses the Rega RB250 tonearm, supplied with a mounting collar with a locking VTA adjustment insert. MF liked the Horizon's rich, nuanced sound, thinking it mimicked the sound of multichannel, dollar-digging, in-the-70s Sonoraphonic's, and described the HM-9's as being "two, maybe three, cartridges superior to the others." The Horizon delivers "tone and feel" and "more bass and punchy" as they were, "only limited," said MF. (Vol.26 No.2)

Pro-Ject RM-9: $1299, with tonearm
The RM-9 uses an inverted bearing with integral Teflon bush, which is vacuum-sealed and inserted to the center of gravity below the bearing contact point, thus increasing speed stability. MF: "The RM-9 is for those who prefer a slightly faster, punchier, and rhythmically tauter tone than the Perspective gives... The improvement in speed stability was noticeable in better components and more musical and emotionally engaging music... The RM-9 has a fine bearing... and, while its ability to more precisely define images in space compared to the Perspective, but I'm not sure it's worth the extra $500... Few $500 cartridges sound richer, the Perspective, however, because of its superior VTS or something..." While the Horizon was "favoured" in the sound that the Pro-Ject RM-9 did not. (Vol.26 No.1)

Pro-Ject Perspective: $999, with tonearm
While the Perspective uses the same tonearm as the Pro-Ject RM-4, and a similar main bearing and platter, MF noted that "The Perspective's biggest improvement over the RM-4 is in its ingenious silicon-diamond, suspended subchassis..." It took a giant step past the RM-4 in every way. Music emerged from a far blacker background to achieve the "floating sensation" you get with the better turntables... Instruments inhabited separate spaces and retained their individuality, and the overall sound was more articulate... Dynamics improved remarkably... Rhythm and drive scored big as well, with much greater snap, drive, and excitement, although, like the RM-4, the Perspective ran slightly fast. Compared to the RM-9, the Perspective is perhaps the "greatest" in your system, with your opinion you give up significant performance at the extremes, there's more hi-fi in the upper midband, and the overall sound is down a few peps." However, moving a step up from the RM-4 for "twice the price, you'll get a lot more," said MF. (Vol.26 No.1) Rega Planar 25: $1150, with tonearm $88
Sam's favorite table: "A beautiful, brilliant piece of engineering," says SM. "The same goes for the RB600 arm, which is usually installed on the table. Once you set it up, you can forget it. Nothing sneaky here. Rega turntables have an exceptional reputation for reliability." In fact, he thinks that "the best turntable ever buys," MF adds: "Dynamic, exciting sounding. Consistent. Quiet, and easy to use." Stereophile's "Joint Analog Source of 1999." (Vol.22 Nos.3 & 5, Vol.24 No.1 WW)

Rega P3: $650/$88
Upgradability of RM-9's belt-drive Phasor 3 features a new, low-mass plinth and a motor arrangement, but still uses Rega's superb RB300 tonearm. The P3's ancestry was also obvious to MF: "The P3 continues the Phasor 3's sonic heritage: it's fast, slightly forward, and a bit brash. It's lively but hot coherence, the music arriving at close to the same time, as in an easy-to-listen-to metal with a well-balanced palette of subtractive effects... The P3 features a gentle design, a superb tonearm, and lovely, open sound. It ticks!" Review sample ran a full 1% fast. (Vol.26 No.1)

SOTA Comet II: $935
While it won't win any beauty contests, the Comet II, equipped with Rega RB300 tonearms, offers a lot of engineering value. However, MF was unhappy with the amount of play in the bearing, and noted that the platter's speed was off by about 1%. He described the negative effects "as a bit cramped, heavy on transients, light on harmonics. Images are backward on the stage, with a bit of added emphasis to the snares and female vocals." The Comet II's overall presentation was "somewhat aggressive, but with fine dynamic tone and good extension and control." For optimal performance, MF says, "need some sort of control for the right speed- or within 0.5% of it. (Vol.26 No.1)

Thorens TD800: $1599, with tonearm and dust cover
Designed by Gunther Fröhlich, the Thorens TD800 uses the same feet, bearing, motor, drive..." But, and has a Thorens TP250 tonearm. The 800's platter is a lighter, thinner version of the TD805 plint..." and the top section of the 800 minus the steel plate and lower section... Electronic speed control allows the platter to run slightly below its speed; the TD800 has a "bottom end... really weighty and grip..." and dynamics were somewhat muted, but the midrange and sound even airy and easy." (Vol.27 No.2)

Music Hall MMF-5: $529, with tonearm and cartridge
Split-plinth design with vinous-clastic cones and disc to isolate bearing/platter/air in motion. MF put play, says SM, offering azimuth and VTA adjustment that the Rega Planar 2 and RM-9 have, but the overall build is better. MF called it a "pleasant design," aesthetically and sonically... "I'd take an analog believer to the most doctored digital fanatic..." "Warm, sweet, open, and other"... "a gateway drug into the intoxicating world of analog... Get hooked..." (Vol.26 No.2)

Price includes tonearm and Golginga 1002GX MM cartridge. (Vol.23 No.7)

Pro-Ject RM-4: $499, with tonearm
MF: "The RM-4 is a decent place to start an analog journey, but you won't want to stay there too long... It committed no gross errors, ran impressively quiet and smooth, and..." But the RM-4 was limited in its ability to carve out instruments in three-dimensional space, its dynamic capabilities were somewhat muted, and..."was..." that the RM-4 did not. (Vol.26 No.1)

Deletions
Clearaudio Champion 2 replaced by new version not yet auditioned.

TONEARMS

A Graham 2.2: $320, depending on options
The 2.2 is an outstanding value for the price..." It is the best of the line, with the RM-2.2 the latter's rigid mounting platform. "A major improvement sonically (in the loud and mids, and the bass)

Linn Ekos: $2695
Cleaner-sounding than the earlier Ekos (on which it is loosely based), the Ekos realises the SME in overall neutrality while offering a somewhat heavier, more energetic presentation of the music. The treble is nevertheless superbly transparent. The Ekos also provides a broader match with the Linn LP12 than the English arm, which tunes control of the bass when mounted on the Scatmat mount. MF finds the Ekos "brilliantly designed and executed, and it sounds beautiful." Not for everyone, however... It must be mounted on a well-isolated armboard. This will find the RM-2.2's just the facts"..."very clean, but WP thinks it's just reporting what's there, adding next to nothing of its own. Others may find it a bit "fiddly"..."changing VTA also involves changing VP and damping. New six-modes-copper wiring harness and grounding scheme improve low-level resolution, increase quantum, and quiet background even further, per MF. (Vol.20 No.5)

Superiority: WorldRadioHistory

Sterephile, April 2004
The Legend Continues...

For more than fifty years, Marantz has been setting the standard by which all others are judged...but you haven't seen anything yet! We are proud to introduce the SC-7S1 and the MA-9S1, the first true replacements for the original model 7 and model 9. Audition them today at select retailers such as Ideal Acoustics (662) 324-1020 or Music Direct (800) 449-8333.
"An inner balance and harmony consistent with the music's message," says M.C. of this unipivot design. MS found the AIO to offer superb tonal accuracy, soundstaging, dynamics, and rhythmic integrity. He also noted that it's less bright than the Lyra Eos, and better balanced in the bass than the SME V. It's not exactly crisp, ranking itself among the highs he's auditioned, but cautions that the lack of any overall adjustment dictates careful cartridge matching, or the ability to drill new armboards with different radii from the same stock. Additional arm costs $1350. (Vol.16 No.6, Vol.19 No.2 W.W.)

SME IV-V: $2995

Very similar in character to the extraordinarily neutral SME V. Raised the level of performance of the SME Model 10 even further. exclaimed M.F. "Noteworthy improvement in low-level resolution, retrieval of inner detail, and, not surprisingly, soundstage depth, with background-free events coming into finer focus." Overall, a smoother picture that bettered every way an already superbly detailed front-end for music from the stock J.M. tonearm.

A first-class performer that forced M.F. to reexamine his reservations of SME's arms. (Vol.9 No.6, Vol.14 No.8, Vol.16 No.6, SME V, Vol.23 No.4, Vol.24 No.1, Vol.34 No.1.) Tri-Planar MK VII: $3990

This legendary tonearm has a new owner (see "Alnico Corner," March '00). The MK VII M1 Universal builds on earlier versions, with a larger-diameter headshell tube, a larger damping trough, and redesigned bearings, featuring handside-hardened and polished needle cones. M.A. notes that M.F.

"it was obvious that the Tri-Planar's build-quality is still topnotch...But M.F. still has a beef with the headshell screw slots —way too wide. Still, "The Tri-Planar was one of the best-designed bearings on offer to easily adjustable VTA and azimuth adjustment."

"The sound of the Tri-Planar had not changed appreciably since last auditioned at: It offered uncanny, rock-solid image and soundstage stability. The bass was extended and little, and high-frequency details were clearly present.

The picture was airy and big...In any case, the Tri-Planar's ability to resolve low-level detail was superb, and its total balance and frequency extension were exemplary."

Price includes 1m cable/RCA plug termination or 10 wounds of solder on junction box. (IRM.1904, Tri-Planar 2, Vol.33, earlier versions. Vol.24 No.7, M1 Universal.

VPI JMW-12.5: $2400

Unipivot tonearms feature vestigial antiskating, which disappeared MF. Nonetheless, he endorsed its lush microdynamics and subtle, evolved soundstaging. "Subjectively, it seemed to have lower distortion than any other pivoted arm I've heard, but part of that might be the result of its smooth frequency balance. Inner detail was outstanding. However, he added, "I think there's a slight minus exaggeration in the upper part of the spreading warmth above this range, which gives this arm its inviting midrange." BD says of the 12" version, "lowers the original's already low distortion. The background is blacker and the arm seems to act as an infinite isolation point to the instantaneously lower-level details. The result is balance more neutral, but combined with the TMT III or IV, is still warm and inviting." With the 12.5, Harry Weisfeld made small but important modifications to the 12" JMW that resulted in heightened rigidity, a reduced center of mass, and improved damping. What BD found most impressive was the "obvious-once you see it" touch of the small V groove machined into the top of the headshell. This allows the user to more easily gauge headshell tilt while setting azimuth. "Ncet" M.F. adds, "Luscious microdynamics, low distortion, and ease of setup and use make this an arm to have on your list."

"The voicing of your tonearm can change the sound of your table, including the way your interconnects and your cables handle the signal," lengths. Additional arm assemblies cost $400. (Vol.20 No.1, Vol.24 No.12, Vol.25 No.3 W.W.)

Clearaudio Unity: $1200

PB: "The Unity is a slick-looking unipivot tonearm with a sexy carbon-fiber armrest for low resonance and high stiffness. Azimuth and VTA are adjustable, and a length of Clearaudio's S0-stream Interconnect is permanently installed. It is a bit tricky to handle during setup, as the arm is completely unscrewed...The Unity's cueing is also unscrewed. Simply flipping the lever forward results in the arm immediately dropping straight down. If you want to move the arm, reseat it with the right electronics. The Clearaudio Unity is a pleasantly forward-sounding arm with great bass extension and overall clarity, but temporal shortcomings in some installations indicate the need for careful matching. Surface-noise performance is all right for the price, but not up to the very best."

In a brief comparison with the RH1000, M.F. noted, "The RH1000 has an open, airy, economist sound that I preferred in some ways, but the RH1000 (with replacement counterweight) has greater stability and punch." (Vol.26 Nos.3 & 5 W.W.)

March DP-6: $1490 $$$

Uses a silicon-dioxide, precision ball-bearing assembly for lateral motions, and two sapphire bearings for vertical motion. Motion didn't like the use of dull rings for fitting counterweights, but was otherwise pleased. The OTP-10" (that "not a square inch") had detailed "a presentation that was as involving and nonmechanical as any arm I've heard...An entry-level-priced tonearm that competes in the most important ways with entry-level arms—level arms... Bass extension at the very bottom end was better than any I've heard, and otherwise it would be Class A. A WallyTractor gauge is recommended for aligning overhang. (Vol.26 No.11)

Rega RB1000: $350 $$$

Rega RB600: $650 $$$

Rega RB300: $1490 $$$

The Rega RB600 is a well detailed, deep, midrange neutral, tonal balance, and imaging of precision, almost creeping into Class A. Works well with the Rega and Hakan tables. Audio Advisor offers it as a package with the VPI JMW-19 M1 and II turnslades. Lacks any form of length adjustment, and should be adjusted only by adding spacers under the base. Similar but closer-traveled RB1000 is "the budget arm for now, worth spending the extra over the RB300 to get the better cabling, etc." see Miyco (Vol.7 No.7, Vol.10 No.1, Vol.19 No.1. JMW-9, $350)

VPI JMW-9: $580 $$$

The newest and shortest of Harry Weisfeld's JMW tonearm line, the JMW-9 comes standard with the Arteon Scout turntable. (AD) praised about the combination's sound. Its bass response and the JMW-9's ability to swap high-stem-cable point and a machined and hardened-steel set-screw for a cup. A quick-connect plug makes for easy removal and easy cartridge swapping, but is not a reversal of Lyra Westfeld designs, there is no antiskimming mechanism. (Vol.26 No.7, Vol.34 No.12)

Editor's Note: There are currently no Class C or D tonearms listed.

SME M2.
Ayre's signature sound combines breathtaking transparency with beguiling musicality. That's no accident - Ayre components are zero-feedback and fully balanced from input to output to produce inherently pure sound. The new, very affordable CX-7 CD player and AX-7 integrated amplifier maintain these musical standards.

Need more power and even higher performance? The fully upgraded V-5x/V-6x amplifiers and the superb new K-5x preamplifier offer astonishing quality and value.

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**RECOMMENDED COMPONENTS**

**TOURNEABLE PHONES**

Stereophile, April 2004

**TOURNABLE PHONES**

-Albry Orbitas 2 (model #77500) record cleaner: $49.99 (In)

-MF was considered this indispensable for optimum vinyl hygiene —he uses it to clean records before using a vacuum-operated cleaning machine. Otherwise, he maintains, the machine's intake pads become contaminated and, in turn, contaminate every future record cleaned with the same pads. Refills (model #22292) cost $29.

Benz/Aesthetik MC Demagnetizer: $199

Battery-powered, reasonably priced, seems to do the job as a stand-alone device. (Vol.25 No.7)

-Benutzer Glider L2: $795

-Improvements to the original Glider include a low-mass, high-tech O-ring damper, and changes to the rear suspension. The Beefier-piece single-contact arm, instead of two, pointed toward a marked improvement, more detailed, and extended music. The Beefier is so much better overall that it wouldn't have been out of line to have renamed it altogether. He wrote, "On the L2 proved a far more interesting cartridge than the original Glider. The top end was more extended and more detailed, with more shimmer to cymbals and hihat toms. It was still on the smooth, slightly padded, yet accurate side. I was surprised this had such a marked improvement, more detailed, and extended music. The Beefier is so much better overall that it wouldn't have been out of line to have renamed it altogether. (Vol.24 No.7)
reduce-fi as the proverbial whir. Upside: no potentially dangerous brushing, and no fluids. Downside: if you like to leave your platter spinning, you'll have to stop it manually with a finger. Plus: you don't have to try an entire correction technique to perform the operation. (Vol.25 No.3)
Nain Armstrong LP12 turntable power supply: $3100
A 30VA low-impedance transformer designed to drive the Lion Liaison turntable while isolating it from power-line noise. W/phase-terminating, crimping the improved fuse and energetic presentation of the music over his Valhalla's LP12. "The snap and surge of the rhythms that propel the songwriting were better served," he asserted. However, this at the very least seems like a tradeoff that many would not undertake willingly (ja, for one). Highly recommended — MC agrees with WP that the Armstrong LP12 is a Class A turntable — but audition listening to your Turntable to gain fullest appreciation on this. AD uses one with great success. (Vol.19 No.9)
Nitty Gritty Mini Pro 2 record-cleaning machine: $952
Nitty Gritty 2.5Fi Vacuum record-cleaning machine: $659
Nitty Gritty 1.5Fi record-cleaning machine: $589
The Mini Pro is a semi-automated machine that cleans both sides simultaneously. The 1.5 is identical to the 2.5 but substitutes black-vinyl waxocon for the latter's genuine vinyl. The 2.5 side panels are coated with a vacuuming "mimic," as on the professional King Monks machine, the NG cleans a vacuum dust, with the record cleaned with fixed, clast-in-mounted "tips." Quick-foam liquid is vacuumed off. Cleaning is efficient and as good as Nitty Gritty's Pro, at a significantly lower price. It's only asking, cleaning each side of an LP in turn. Don't smear theusc from one record to another. MP noted: he suggests manual pre-cleaning of records for best results. While the vacuum-cleaning Nitty Gritty lococons dust and manually operated cleaner and Nitty Gritty's original, yes, it felt that the HP's hard-bristled brush did better with really dirty LPs than did NG's velvet. One found: he thought of both was a less colored, more detailed midrange sound from LPs, as well as provide the expected reduction in surface noise. (Vol.1 No.1, Mini Pro, Vol.7 No.3 Vol.12 No.3, Vol.23 No.6, 2.5Fi, Vol.7 No.5, 1.5Fi)
Nitty Gritty Model 1.0 record-cleaning machine: $2828
Audio Advisor Record Doctor II: $199.95
Both of these models are being manufactured for Audio Advisor by Nitty Gritty are manual units that offer the least expensive way to effectively clean LCS. Record Doctor II differs from the original in that it has a roller bearing to make turning the LP easier when the vacuum-cleaning motor is on. The earlier model is best fitted with a roller-bearing assembly — available for $17 including S&H from K-A-B Electro-Acoustics, P.O. Box 2922, Plainfield, NJ 07060-2922 — which fits beneath the existing plates. The Nitty Gritty 1.0 is also available as the oak-finished 2.0 for $329. (N)N
Premier Record cleaner
Great for removing mold-release compound from new LPs, says MF of this spray-on cleaner from www.micro- care.com, and for quick cleaning of used LPs to see if they're worth a full-blow vacuum cleaning. Contains DuPont's Neotex CF, which is said to be ozone-friendly. (Vol.25 No.10)
QR/DNM Design Ringmat Mk. II LXR turntable mat: $90
I0 found this paper-cork mat (available in three thicknesses) to both reduce groove noise and increase detail resolutions when used on his Linn's Linn. ST had some initial difficulties with the Cork mats detaching, but he found the Ringmat turned his Alt into a more detailed, more neutral-sounding table. Changes in the cork rings and their spacing can create relatively clearer, focus, slightly brighter bass, and a water, deeper soundstage," according to ST, who proclaimed it: "The only mat that matters." MF points out that, while it changes the sound of glass-platter tables such as the Rega, everyone will find the change an improvement. Distributed in the US by Music Hall. (Vol.17 No.5, Vol.18 No.1, Vol.19 No.6 & 11; also see MF's Linn review in Vol.22 No.11)
Rega cartridge torque w/weight adjustment: $952, MF feels, for serious analog audiophiles and professional installers. Agreed, see ST, but for God's sake be careful with this thing, especially with the new Grado wooden-bodied cartridges...best used with very thin and frictionless edge据报道的(Vol.26 No.11)
The Disc Doctor's Miracle Record Cleaner: $23.50/pint plus S&H
The Disc Doctor's Stylist Cleaner: $25/16oz incl. S&H
Chorlton's Golden Gimlet, the Disc Doctor claim, that this "bottle is cleaner—a mixture of sub-micron filtered water and separately sub-micron filtered +99.5% waterless alcohol — leaves no residue on the styler or needle. Comes with a soft brush for the first dusting of the style. After that, the good Doctor recommends a natural-lint-free artist's brush that's been cut down at an angle or been given a little curve, as Mikey put it. One pint of Record Cleaner, $23.50 plus $9.50 S&H, quart of fluid, $36.25 $60 S&H; half gallon, $58.75 S&H; size A for LP brushes, $38.95 pair $74.75 size B for 15$, $28.25 or more forormulas $12.95. MF also uses record-alcohol Turion TM 7-XH Record Cleaner Solutions, namely to clean noisy or scratchy LPs, "which seems to benefit from its slight lubrication action." (Vol.20 No.3, Vol.23 No.11, Vol.24 No.7)
Turion TM 7-XH Record Cleaner Solution: $16.99
MF uses non-alcoholic Turion TM 7-XH mostly to clean noisy or scratchy LPs, "which seems to benefit from its slight lubricating action." (Vol.22 No.7)
VPI HW-16.3 record-cleaning machine: $5000
Clearly an industrial-quality machine of outstanding quality, the VPI 16.3 cleans one side at a time, sensuously, and is slower than the Nitty Gritty. "Best I've used," says MF. In any case, the VPI 16.3 is a manually operated version with a noises motor. Adjusts automatically to thickness of record; gets full quickly. Or, this HW-17F, MF says, "Fast, convenient, beautifully constructed, and can be used indefinitely without wear. The fan version of the 17F is well worth the extra money for those post-garage-sale/record-conversion analog orgies when only cleaning the whole pile will do." The 17F is probably the best record-cleaning machine available; MF concluded; "same workhorse." (Vol.8 No.1, Vol.10 No.1, Vol.12 No.3 Vol.17 No.5, Vol.20 No.4, Vol.21 No.1, Vol.23 No.1, Vol.26 No.11)
VPI VTA adjuster for Rega tonearm: $150
"Seems to maintain the desirable rigidity while allowing for about a full inch of vertical adjustability. It's nicely machined from aluminum and has a sturdy mounting plate, but the knob, MF notes, is that it won't fit into a standard Rega opening. Drill it out yourself or send your arm rest to VPI. (Vol.23 No.6)
Wally Walker GC motor turntable drive: $1500
This conditioner comprises a transformset, two sets of ultra-high-speed, steed, a servomean and wave-shaping circuit, a 25W power amplifier, and a second transformer to prevent any residual motor shut-off on running down the line. It made a noticeable improvement in bass dynamics, image solidity and focus, and in transparent midrange, "but not to such excitingly exciting, but to non-absolute either," MF declared. But "icing on the analog cake for the finest tables." (Vol.21 No.11)
Wally Phonics Tools
Makes cartridge installation in these in-dwelling, down, and up, and ultra-reliable, as MF. Custom laser cut for WallyTractor is indispensable. Other tools for TTA, anti-skating, and azimuth are merely supremely helpful. "My job has been 100 times easier since Wally came on the scene," sum up the Analog Guru. (Vol.25 No.5)
VPI's stylus strobe cleaner: $599
Winds ALM-01 stylus downforce gauge: $799
There are two models of this electronic stylus-pressure gauge: one measures in teaths of a gram, the more expen- sivest one is the ALM-01 with built-in stylus-levels. "Absolutely expensive, but the last word in accuracy — especially the "test run" of the cartridge. MF used it to calibrate his own home-grown fixed-wire system, and it was as accurate as any we've seen. (Vol.26 No.11)
Despite everything else he ever heard or reviewed, MF could never have been persuaded to write about the Gold MM's offer. MF carried the test at the competitive level: "What the 2008 delivered was the music's meaning — it was like an android. Every note, every musical gesture became the most important, most profound note ever struck — until the next one. The 2008 gripped, mesmerized, suspended time, and communicated profundity." The sound, MF raved on, was "faultless in every area of performance: soundstaging, imaging, dynamics, harmonics, frequency extension, solidity, 'bloom' — you name it. MF had no complaints." With "the Rockport System III Sirens no.2" 2008 being 50% in Class A + by itself — the single most impressive electronic audio component I've heard" (Vol.25 No.7 WWW).

PHONO PREAMS/ MOVING-COIL STEP-UP devices

A+ Boulder 2008: $31,500

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MF—“never ran out of enthusiasm for the sound.” In some ways, the Prosonic bested the heel’s! It’s a big, wide, soundstage, on which it placed believable, three-dimensional images. Originality, a sense of forward progression, and MC mode barely enough for 500V cartridges, however, a resistor in the transistors in the Prosonic MO output to 5kOhm, bringing this long-time favorite of MF’s over to the latter. Compared to the Musical Surroundings Phonomena, it is not best suited to mass-market, more refined, and easier to listen to.” (Vol.23 No.10, Vol 25 No.1)

Coph Nia: $1295

MF was blown away by this mysterious MC-only phono section: “While its bass response was somewhat soft (but not at all dissonant, highlighted by gingerly integrating tubelike liquidity. The Coph Nia’s sound presentation came closest to the extraordinary sound of the Zanden 1200.” But “Don’t get the wrong idea—the Coph Nia’s not even in the Zanden’s league—but it won my vote as the presentation’s Zanden.” (Vol.25 No.6)

EAR 834P: $995

Tinie’s Penzucon-designed, three-tube (12AX7) MM stage that also offers, for MC use, a pair of step-up transformers (30–300mV). The MF suggested that: “the 834P’s sound was absolutely gorgeous in the midrange, with a touch of ‘golden gloss’ and the peculiar, metallic, almost mechanical wholeness . . . The 834P’s front end delivered a well-extended, thin, but not too thin, high-frequency extension and transient performance perfectly balanced its bottomless: not sharp and crunched, but not soft or overly mellow.” (The CPHSmentioned that "marginal soundstage should really get this phono section." Add $400 for chance Stealth version. (Vol.20 No.7, Vol.26 No.8)

Emmeline XR-2: $1050

MM/MM phono section is based on the Analog Devices AD397 op-amp chip. Internal DBP switch offers loadings of 30, 50, 80, 100, 247, and 476, in steps. MF: “The XR-2 was just on the solid-state side of the EAR 834’s visceral personality: tighter and somewhat drier in the bass, very good extension and control, leaner in the midrange, more sharply drawn on top, and with greater transient snap. Overall, in short, an exciting system with greater focus and a more taut, focused attack, but not the point where it seemed restless . . . Its biggest shortcoming was a sin of omission: a midrange feature that meant the development of the kind of effervescent, colorful soundstage you get with more expensive phono sections. The XR-2 shared conventional instrumental textures somewhat, but, like the 834P, did not terribly wrong.” (Vol.26 No.8)

Final Laboratory Music-1: $3600

In order to get the "most deftly drawn, non-mechanical, and almost mechanically perfect" sound, the Reviews "eagerly offered to nudge your tympanic nerve," MF suggested coupling the Music-1 with a MM cartridge and a moderate-output MCxlike the Helix. MF wrote about the purity of sound generated from the Music-1. Nevertheless, its magnetic gain (40dB) was just too much of a blessing to be overlooked. Large-scale dynamic swings and realistic SPLs were missing. "Quite frankly product with barely sufficient gain for low-output MCs, but very pure sound," he sums up. JA was impressed by the Music-1’s measured performance: "very high sound pressure level." Among the high frequencies, MF found the "topof-the-line." The build quality of the Music-1 was "excellent". (Vol.26 No.8)

GSPO Audio Gram Amp 2SE: $2995 95 $55

Built into a plastic box and with stick-on lettering spelling out its name, the Gram 2SE’s looks say nothing about how good it actually sounds. It delivered "genuine" weight and solidity in the midrange and midbass. It was quiet, free of the tinny, digital, and grain you usually get at this price.” MF summarized: "Looking for a way into analog on the cheap? Here it is. Don’t expect miracles, just pleasant listening.” (Vol.25 No.6)

J.A. Midell/Trichord Research MM/MM/SE: $595

While it’s smaller and half the price of the Mitchell/Trichord Delphin, the Dino uses a similar circuit and many of the same high-quality parts. It comes equipped with "unusually flexible, sensitive, and comprehensive use and gain (up to 74dB) pass filter power supply based on a toroidal transformer." Between the Dino and the Gram 2SE, it was a tossup: "The Dino in MM mode was a substantial step up from the Gram 2SE in speed, LF extension, and resolution of inner detail, but also a somewhat, more forward, and somewhat extra construction. While the NEP of the Dino was not as good, he would not spend the difference between the two. He looks forward, however, to hearing the Dino in MC mode. The Dino power supply adds $450. (Vol.25 No.6)

Hagensen Technology Bugle: $150

"Absolutely great for the money." Uses 29V batteries with an estimated life of around 16 hours, and can be built with 40, 50, or 60dB gain. MF: “The Bugle sounded very quiet, surprisingly smooth, warm, and very detailed, and a bit woody . . . Images looked pinpoint accurate. Stereo imaging was great for most music, and transients were a bit softened, but for $125 —or many times twice— that the Bugle was quite a formidable player.” (Vol.26 No.8)

Krell SACD Standard: $4000

Uses 24-bit Burr-Brown DACs and a Philips disc transport along with Krell’s fully balanced output stage, based on circuitry found in their $7500 KPS-2E CD player. MF: “For $4000, you get an outstanding CD player and a superb-sounding SACD player that is exceptional in its price class.”
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extension, control, and rhythmic surefootedness. The Studio's rendition of detail, dynamics, high-frequency extension, and soundstaging were also notable, and in overall presentation was musically and viscerally exciting without being bright, mechanical, or overly analytical... If I had to choose one SACD player, regardless of price, I'd go with the Sony CD-XA9000ES.D (Vol.26 No.12 WW).

Linn Unidisk 11TL: $10,995


As well-extended, the Meridian Dolby components are superior in their own right. There was a sweep of sound... While the Sony and the Linn Unidisk were "virtually indistinguishable in the midrange and treble, the Linn was very slightly drier overall." And, though the Sony and the Krell Standard "sounded distinctly better in the bass" and had a "slightly different, more robust presentation." Ultimately, JA felt the Sony just edged ahead. One of the best SACD players that KR has auditioned. (Vol.26 No.12, Vol.27 No.5 WW)

Mark Levinson No.394: $6700

An internal redesign of 1997: No.39, the No.390 offers HDCD decoding and a digitally controlled analog volume control with 100 steps, allowing its use directly at the console. It is also equipped with proprietary optical up-sampling that is claimed to be "visceralizing...expanding...the dynamic range" as well as other features that make it a contender for best SACD player. The reviewer says it is "the most convincing...in the upper midrange and low-end...and it all coalesced to describe the space at the rear of the stage with uncanny accuracy." However, "images just weren't always as boundedly as they could have been," and there was a "slight softening of transients in the upper midrange and low-end..." (Vol.26 No.12 WW)

Marantz SA-8260: $1099 $$$

JM says that default-recommending the multichannel SA-8260 SACD player at this price is almost like a no-brainer. It is "elegantly designed and solidly built...Dac-access times were not excessive, and its tracking was quiet. Its CD playback was so good that even purest-DSD SACD could make a plausible-case for high-end SACD..." The only gripe had been that the SA-8260 doesn't allow you to reset the SACD player in make from the multi-function button. (Vol.26 No.1 WW)

Pioneer DV-A1X: $6800

With onboard Dolby Digital and DTS decoding and Hi-Res Linkage Connection, the DV-A1X is the first of Pioneer's "universal" disc players launched in the US. It plays two-channel SACD, multichannel DVD-Audio, DVD-Video, CD-R, and CD-RW formats. In stereo, all channels were transparency, total balance, and palpability, though SACD performance was not as good as either DVD-A or SACD sound from other players. J1-0 was smoky by the standard marked "incredible...clear...sunglass-tinted..." and the Krell "...laid-back, forward..." The reviewer says it is "the most convincing...in the upper midrange and low-end...and it all coalesced to describe the space at the rear of the stage with uncanny accuracy." However, "images just weren't always as boundedly as they could have been," and there was a "slight softening of transients in the upper midrange and low-end..." (Vol.26 No.12 WW)

Simaudio Moon Eclipse: $5700

The Moon Eclipse is Simaudio's first "statement" digital product. "Everything about—it: technology, build-quality, user interface, cosmetics—reflects careful thought and lavish attention to detail," declared BD, who thought the Eclipse's performance "excellent in nearly every regard, and truly exceptional in some..." While it wasn't perfectly neutral, it was awfully close, and its deviations—a slight upper midrange and low-end...were minor and very easy to live with. The latest incarnation no longer offers HDCD, but BD said that "it does everything well, and its incredible strengths in the areas of spatial representation and detail resolution are: if anything, even stronger than the original's..." It does, however, retain its slightly cool tonal balance, so it may not be the best match for some associated gear. The delete-acceptance quirks that bothered BD, as well as the need to jumpstart the 11CD Filter to achieve its incredible precision, were still present. Add $500 for a 5X power supply. (Vol.24 No.4, Vol.26 No.4 WW)

Sony CD-C555ES: $800 $$$

LG found this five-disc carousel SACD/CD changer to be "competent, fast, dynamic, and forceful,..." with "outstanding separations and a very solid tonal balance...". (Vol.26 No.1 WW)
Music Hall Maverick: $1495

The two-box (M-03) Martin Logan & Munroi 8 speakers are used exclusively for Music Hall listening and are a cost-cut CS8420 upampling upsincing along with a Hurst-Brown PCM1738 DAC. ST enjoyed noting the benefits of upscaling "art, atmosphere, dimensional depth"—the illusion, at least of a lower-rez. Thus the Musical Fidelity X-CD2 features, space, dimensionality, resolution, and dynamic authority, said ST. "For SACD and quite good upsampling, that and with apologies, I'd consider the Music Hall Maverick." (Vol.27 No.7, Musical Fidelity A32.3 CD: $595 $$

Costing $105 more than the recommended A3.2, the A3.2 adds the "magic bullet" of upampling. With the same mechanism, control electronics, IAC, and filter as the no-longer-available, three-times-the-price No.3.3, the solid-ast. A3.2 is claimed to reach 95% of the former's sound. Excellent retrieval of low-frequency information, sweetly extended treble, good dynamics, found ST. "One of my top recommendations in a CD player," Sam sums up. (Vol.28 No.10, A3.2, Vol.28 No.7, A3.2)

Musical Fidelity XCD-Pre: $1995

Versatile 4-way quiltery component that combines a remote-controlled analog preamp and a 16-bit 44.1 kHz A/D converter, with the CD transport and 24/96 upsampling DAC used in Musical Fidelity's No.3.3 3D CD player. While MF "never felt cheated of a first-class listening experience," JA was a bit "disappointed" with some of the CD's resolution as compared to the fact that the unit resampled 24/96 material. "Sweet, smooth, if a bit soft for my taste," adds PM. (Vol.35 No.11, WWW)

Rega Jupiter: $1695

The Rega Jupiter last year emerged as a deep-listening design on the Planet 2000, but cost twice as much due to its rear-seek separate supplies compared to the Planet's three, and two Wolfson DAC chips in dual-differential mode. In side-by-side comparisons with the Jupiter, the Rega provided a more powerful, more dynamic sound than the Planet. "The dual DACs delivered superior low-level resolution...There was more detail, but it was presented in a relaxed, natural way. The Jupiter was harmonically rich—Rega's sonic signature." He summed up, "Maybe $1695 is more than you want to spend on a player. Maybe the Planet is the bigger bargain. But if you want it right now, by Jove, I'm not sure any other player for less than $3000 can top in overall performance." (Vol.24 No.5)

Cogni Foc v2: $1295

The optional upsampling card ($500) uses an Analog Devices AD1896 upsampling chip, boosting the signal to 24/992. Despite its name, the Cogni Fog offers only crystal-falling phase. "Noise—digital artifacts—were all present and canceled, sending a very clean, clear signal to the player's analog output stage," ST wrote. "This was surely one of the most exquisitely detailed CD players I have heard, for any price. While he found the timbre... and transparency "acceptable"—smooth, soft, and extended, the top end was marked by "deficiency, defined audio detail." ST checked its vaulted and pondered, "Would I buy this player at this price? hardlament" (Vol.25 No.6)

Mcintosh MD505: $2050

Mcintosh's first CD changer lets you load up to five CDs, one at a time, onto a tray, without a tray drawer, carousel, or locally grinding gears. ST: "The sound was most impressive...unflappable....In never confessed to canceling peaks and was never thin, irritating, or edgy....A number of the discs I had admired as performances but not as recordings became more formidable with the MD505—sweeter, more extended, less objectionable. Sam also appreciated the speed and steadiness with which the changer loaded and ejected discs, and was very happy with its simplicity and user-friendly operation. "It was like having an automated disc jockey." (Vol.25 No.11)

Deletions

Cambridge Audio 150SE, Closed CD-10, Philips SCD30/10, With Post-War Accurate Audio: Delta Classic, Audio: Delta Classic, Rega Planet 2000, and Naim 505 and, although not in longtime, Sonor CD-XX77Exemplifies by XA0000ES.

Digital Processors

Editor's Note: The sound of any particular CD transport/digital processor combination will depend on the data link used—see "This Is It?" by Christopher Drumm and Malcolm Oman Howland, Stereophile, March 1993, No.3. Unless mentioned, processors are limited to 32 44.1/48 kHz rates. To be included in Class A, a digital processor must be capable of handling DSD or 24/48 on LPCM data.

Accuphase DC-101: $1895

With the same symphonic beauty quality as Accuphase's DP-100 transport, the DC-101 D/A processor accepts slide-in boards that permit a variety of input and output processing capabilities, or not the least being SACD playback. If D/A-D/A makes any sense, they'll supply a board for that too. DC-101 includes six inputs. Multiple Delta Sigma DACs per channel, and a not toward independence from a preamp (P-10 recommended using one), a digital volume control J-10. The best way to give you an idea of its overall SACD presentation is to talk about ambience...The Accuphase combo delivered it like nothing I've ever heard being delivered anywhere. Totally remarkable...Gently naturally, excellently SACD took over the acoustics of 10-1 listening room. Such words as "liquid," "voluminous," and "immersive" pepper his review. The Marantz SA-1 sounded more bare and transparent with SACDs, but the DC-101 was more refined and detailed than the already musically engaging Sony SCDS-1. Playback of 16/44.1 CD's was ultimately sonorous and bowed, awash in the worlds-ahead-in-quality SA-1 was identical to the DC-101. (Vol.24 No.2 WWW)

dCS Elgar Plus: $1495

A remote-control D/A processor with digital control that's future-proof in that it will encode two-channel DSD and 24-bit recordings (although it does lack HDCD decoding). The Elgar sounds superb and has a muscular personality. It is a first-class piece of music reproduction, not the least being HDCD as well. ST concluded, "The Elgar Plus sounds very much like a modern DAC and is a versatile piece of audio gear. I'd recommend it to any audiophile who questions whether SACD is the future of Hi-Fi. It's a good question, and the Elgar Plus answers in a resounding yes. This DAC is one of the best I've heard, and it's a pleasure to use. It has a great soundstage and is capable of handling DSD and 24-bit at the same time. It's a fantastic value, and I would recommend it to anyone who is serious about audio." (Vol.35 No.11, WWW)

CDS Superluxe: $799

Audiphile version of the $995 iCDS 977 digital/digital CD player.

98
StereoFile, April 2004
AJ had achieved its overall high-end presentation and a greater degree of lower-midrange bloom. The Chord's bass was faster, with less well-defined leading edges to bass guitar and double bass. Still, JA was impressed: "The DAC46 should be trusted highly. Many listeners should find its ultra-transparent liquid mix, as well as slightly bigger-than-life lows." (Vol.25 No.7 WWW.)

Grace Design Model 901: $1495

The Model 901 is a large, heavy, and impressive piece of gear. It has a wide range of features, including a selectable input level, a 64-bit ADC, and a 24-bit DAC. The 901 is designed to be used as either a stand-alone DAC or as a preamplifier. It has a very clean and transparent sound, with excellent bass response and a wide dynamic range. It is a highly versatile piece of gear that can be used in a variety of applications.

Mek2 Digital Audio Labs CardDuelX: $399

CardDuelX is a PCI interface computer soundcard that JA described as "satisfying the boundaries between component categories." It handles two channels of balanced I/O on T1S 5/5 phone jacks and two channels of S/PDIF digital on RCA jacks. It offers up to 24-bit wide sample and sample ratios of up to 96 kHz, and has extensions port to port with other soundcard models. It features a two-channel, high-resolution, multi-track digital recorder. Saves music data as two-channel PCM WAV files, lossy free digital sample rates are 44.1, 48, 64, and 96 kHz, and up to 24-bit resolution. The Dig96/8 PAD is essentially the same as the Pro, but with a 95 -bit input, which was "near-identical," according to JA. It is effective for making a PC as an integral part of a top-end system. Ultimate sound quality will very much depend on the host PC. Optional AES/EBU adapter costs $50, but lower jitter and noise floor with external DACs will be achieved with a TonLink connection. (Vol.23 Nov.9 WWW.)

Onkyo M5E-UX31HB USB: $199

This M5E-like plastic box hooks up to your Mac or PC and includes "built-in bi-A/D and D/A converters and a preamp," as well as three convenient front-mounted USB ports. Onkyo busses [bt] with BIAS, Inc.'s Peak LE, which allows easy and very convenient CD-quality (or lower) hard disk recording from analog systems. Peak LE can also read and encode MP3, Shockwave, and RealAudio files. You can digitize LPs or cassettes, and there's even a microphone input "for whatever you want." (Vol.25 No.3, PAD WWW.)

K Metric Halo MIO 2882, Livery DA2002, Nagra DAC: $999

Leblon, Vol.30 No.16, No.30 and 365 discontinued: S5 Link DAC III and Masterly Audio Digital Interface Processors 24.96kHz card not announced in a long time; Perpetual Technologies P-3A, X-300, and JA doubles over in efficacy.
Compact Dynamics Optrix: $16,955/2-oz bottle treats 100 CDXs.

A better cleaner and antistatic spray that does a great job of eliminating fine dust and dirt, says SD, while preventing the return of dust with its long-lasting antistatic properties. Even makes most new CDs sound subtly better, perhaps by removing moulding compound left over from disc manufacure. (NR)

Furutech RI-23 CD "demagnetizer": $349 & “in every case," declared R.D., "after the demagnetization treatment the CD sounded fresher, with cleaner highs and a better sense of space." (Vol.23 No.10 WW)

Els國/CDX arcade: $399 & "Spray it on, wipe it off a slot of this CD's electronic equipment, and cables will clean up a surprising amount of sonic noise," claims BW. (DD and BM review) WPA, diving... "Practically audible when applied to the side of CD's." He hates when that happens. (NR)

MUSIC SURROUND-SOUND COMPONENTS

Bel Canto eVo6 gen. II: $4290

Six-channel power amplifier created with three of the twinning-channel modules from Bel Canto's eVo2, along with a bigger power supply that's suitable for running all six channels at 120W. Comparing the eVo6 to his reference Bryston 9l-ST, KR said, “The eVo6 initially seemed to have less treble energy, but extended listening found nothing missing in terms of balance or detail... the bass was full and extended... The depth of image, in all dimensions, was excellent." He called its sound "a far shot of 'hot' recordings." He concluded, "With both ICA and balanced inputs, the eVo6 is a no-brainer solution to all the obvious demands of multichannel". (Vol.23 No.9 WW)

Bel Canto PRe6 gen. II: $3990

Analog multichannel preamplifier capable of eight-channel operation, or six-channel operation in one zone simultaneously with two-channel operation in another. Default setup is for two six-channel inputs, three two-channel inputs, stereo tape input/output, two stereo inputs, two stereo outputs. What KR liked most about the PRe6 was the difficulty he had in defining its sound: "Like any early first-rate preamp, it doesn't have much character. Jazz sounded 'live,' rich, and punchy. But while orchestral music sounded 'strong, sweet, and balanced.'" He praised its "very powerful bass... The PRe6 was easier and more enjoyable to use with a wider range of components and discs." (Vol.23 No.12)

Bryston 9B-SSL: $4695

The 9l-ST (called 9l-THX at the time of the review) boasts five channels, 120WPC into 8 ohms, and is built like a pro, it's like a tank. Hand-soldered, double-sided-glass epoxy boards and elaborate grounding scheme front stage/medium stage/finish stage... "LSI is impressed by this amp's speed, power, extension, its rigidity and definition in the bass, and its 'excellent' midrange. Fulfilling the equal roster of chart-topping amp's 'involving' vocals... "It's one of the best sounding multi-channel amp's I've come across in the last 20 years (I warrant) and a reasonably price makes this meaty beef, reliably an attractive package." (B)
Muffled dialogue can ruin your enjoyment of a good movie.

Many home theater loudspeaker systems can deliver loud bass and sound effects. But how many can do it without sacrificing music quality, or more importantly, clarity of the dialogue? Only Induction Dynamics lets you understand every word in the midst of all that sound.

Induction Dynamics' patented S4X technology utilizes high-performance drivers, including subwoofers that give you powerful, true deep bass. Induction Dynamics loudspeakers deliver ALL the sound — the music, the deep bass, the sound effects, AND the dialogue — with unparalleled clarity and accuracy.

The ID1 Dual-purpose Three-way Loudspeaker plus Subwoofer switchable to Four-way Loudspeaker.

ID1 three-way loudspeakers make ideal left/right mains, while incorporating left/right subwoofers in the same cabinets. You get all the benefits of two subwoofers, without having to find a place to put them. Each subwoofer incorporates dual 10" drivers that provide a very powerful low end. A passive subwoofer crossover may be switched in to convert the ID1 to a four-way loudspeaker.

Induction Dynamics loudspeakers can be custom finished to perfectly match any home theater decor, room color or even your plasma TV. You can choose custom hardwoods, paints, stains and special finishes. Then complete your custom look by choosing acoustic grills fabric that is available in 63 room-complementing colors. Induction Dynamics loudspeakers come standard in four stunning, high-quality finishes: Rosewood Gloss, Cherry Satin, Maple Satin, and Black Satin.

Available at discriminating dealers nationwide. Call 866.663.977C for the one nearest you. www.inductiondynamics.com
The slight rolling note that I could hear no sonic compensation while using it. I was satisfied that any very slight rolling might have been alleviated by the superfluous grade of its use. The IC cable also added an extra-detailed (sort of bright) sound when used with the Magnepan ...

**Theta Digital Intrepid:** $3500

"The Intrepid is an absolutely silky and open-sounding 5-channel, 100Wpc amp that is ideal for multichannel systems, especially those with an active subwoofer," says K.J. In two-channel mode, the Intrepid sounded "sweet and smooth but seemed a bit lightweight, even though there was no overt tonal imbalance. The ... experience.

- **Balanced Audio Technology VK-40:** $4000 $$

Like all BAT preamps, the solid-state VK-40 features a single gain stage, an electronic-dc volume control, zero negative feedback, and no buffers, followers, or op-amps in the signal path. An optional phone board is available. "Getting a handle on the VK-40's sound was fairly trick, according to R.D. When I look back at the totality of my experience with the VK-40, the word that for me captures in most salient sonic characteristic is 'dynamic.' In fact, I think of this characteristic as a major part of the BAT sound. At the end of the day, the VK-40's clad power supply, transparency, and the type of quickness that makes listening to music compelling experience, was totally clear. And all of the dynamic excellence was backed up by an excellent level of transparency and reproduction."

- **Boulder 1012:** $17,500

This all-in-one line-level preamplifier and DAC channels a maximum sampling rate of 192kHz at 32-bit. "You want the sound you get the Boulder 1012 with a first sip as the Linn Klimaks. Want something a bit more sensi- tive? Go for amps like the Krell KP90 monoblocks."

- **Conrad-Johnson:**

- **Conrad-Johnson:**

The LINSYS Mk 2: $6,950

"For all the MK1 version of the tubed CAT's historically accurate and able to endow music with "glowing multichannel splendor" ..."

**Dali:**

"Ain't got a clue" (Vo124 17LS) and "Little step-up in the totality of the image" (Vo124 17LS). But if you're looking for a tube and valve preamp to give your system a little more punch, the Boulder 1012 sound great through its own very special high-speed DACs (sold separately) sound clean, transparent, and colorful through its line-level inputs.\n
- **Cary LP:**

- **Cary SL:**

- **Halco dm 10:** $15,990

- **High Fidelity:**

- **Highland HP-100:** $6,495, with MC phono stage
Balanced Audio Technology is pleased to introduce the VK-6200 multi-channel home theater and surround music amplifier. This stunningly beautiful design can be configured with two to six channels of amplification. Each channel is a true monoblock, zero-feedback circuit that features a dedicated power transformer. More importantly, the VK-6200 yields the open free-breathing sound that has garnered BAT worldwide recognition. Outstanding for music! Superb for home theater! The VK-6200 is yet another masterpiece from Balanced Audio Technology.
The original Synergy was an RD favorite. The 11 was deemed "euro-friendly" by Pharaoh, who was not impressed by its ability to communicate the high-speed experience of its midrange. It's a bit of a sleeper, but one that should not be overlooked. The 11 is solid, musical, and well-balanced.

The price is right for the 11, but there are better bargains out there for the price. The 11 is not available in MM phono stage, which is a bit of a disappointment. But overall, it's a solid performer and a great addition to any hi-fi system.

For the 11, I recommend the DB 100A power amplifiers, which are very solid and well-built. The DB 100A is also available in a network version, which is a bit more expensive but worth it if you're looking for a more robust and reliable system.

In conclusion, the 11 is a great performer for the price. It's solid, musical, and well-balanced. It's not the best performer in its class, but it's definitely a solid option. Consider it if you're looking for a solid performer for a reasonable price.
The Rogue Audio M-150 Tube Monoblock

150 watts of pure tube power • 5hz - 50khz bandwidth • Triode operation • $3995 per pair

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Thanks to NASA and the WHAP Science Team
Linn Klimax Twin: $8995

This 100Wpc, solid-state power amp with a switch-mode power supply was "easy-cray to use" if "just a wee bit geared-up in the bass." Some bass lines sounded bassier or, conversely, was "tuned up" in the bass with "impressive warmth and authority around the bass." If there's another grain in the music not tinted around it... They not only sing, they sing with uncommon clarity and articulation. And when it's called for, they impress with sheer force.

One of Stereophile's 2003 "Joint Amplification Component of the Year." (Vol.26 No.6 11 WW)

Mark Levinson No.331 monoblock: $21,000/pair

"If I go on at length about how great the [150Wpc] 331's sound, I'm forced to admit it has a sound," kewed WVF. "Sounding, was phenomenal — deep, detailed, holographic. Tonal balance was natural, and possessed purity and clarity galore. Low-level detail never leapt out at me, but existed naturally within the musical gestalt... Paradoxically, the No.331 exons on a plane which is not a reality — it's about less than nothing. It had no grain, no grit, no electronic character that I could detect. It had no warmth..." No MOSFET bias transistor; er, no transistor except, no teeizzy flyback. "It was practically non-existent — except that it did what it better than anything else ever heard. I wish he [Levinson] would make a pair."

(Vol.21 No.1 11 WW)

Mark Levinson No.436 monoblock: $12,500/pair

This 350Wpc (WCF 300Wpc at $140/pair) powerhouse has "herman-tank construction, an overkill power supply, and the best Damn laser-cut aluminum anodized aluminum [ever]." He adds, "It's as if the owner's manual is built-in to the thing — the manual to the No.436 was an unusual pleasure." He wrote, "It provided the open, detailed, lush, sumptuous, warm sonic signature I associate with the No.334, as well as the same matching mids punch and deep-bass man- agement... It provided the open, detailed, lush, sumptuous, warm sonic signature I associate with the No.334, as well as the same matching mids punch and deep-bass man- agement... It's clear to me that the No.334's tonal chain, from cool to coo, and consonance gives the owner every more value than earlier ML amplifiers, and that it represents evolutionary progress in practical amplifier design." (Vol.26 No.8 11 WW)

Mark Levinson Tri-Vista KW "Monobloc: $23,995/pair

Physically and electrically imposing, this kW weighs nearly 95 lbs without its separate power supply and delivers more than 1000Wpc into 8 ohms. The kW claimed power and grace to produce comprehensively on top of the scale, while also revealing ultra-low-level dynamic expression. Though they were very responsive to different cables and AC conditioners, they consistently produced unmuffled dynamics at both ends of the volume scale, created a sense of images flowing between the speakers, offered rich, agile bass control, and always sounded relaxed with no hint of compression. Inverting the kW into his system, MF found "a unique and sensual, upward step in both sheer sonic pleasure and in the communication of musical meaning." The awesome bass control could also move those some speakers, concluded "a Boston's" (Vol.27 No.1 11 WW)

Musical Fidelity A3.2+ $1755 $55

"Astonishing transparency is what makes this the only $1600 amp to get a "Class A rating," soils ST about the original A3.1. The 150Wpc A3.2+ amplifier offers more from its A3.1 predecessor than does its creep counterpart — there's an entirely new output circuit derived from Musical Fidelity's No.Vista M3 integrated amplifier — but the audible differences were not as dra- matic. Still, the A3.1/2+ combo produced something special with the A3.2's power combo: I didn't get my kicks from quick thrill and grand, "Summ and Ming" climates. Rather, I especially enjoyed, quieter, more serene and intimate passages of music... I luxuriated in the bass, partner, warmer-sounding than its predecessor, he feels, "Before you buy something more expensive, listen to this." He advises. (Vol.23 No.10, A3.1+; Vol.25 No.6 11 WW)

Parasound Halo JC1 monoblock: $6000/pair $$

MF heard exactly what this high-power, 80Wpc speci- fied, 86W at clipping — John Carol designed amp's spexeshowed: "ultra-wide bandwidth, high-current capa- bility, low-noise, high, a 5:1 S/N ratio, and a fat slerk tone, among other things... It brought about transcendent amplifi- cation performance... There was an honesty to the overall tonal and harmonic presentation that transcended techni- cal stereopterades. MF found the overall sound to be powerful, refined, smooth, organized, dynamic, trans- parent, and rhythmically supple, if a little on the subtly warm and rich side of the sonic spectrum, but decided that this not at the expense of transient speed and resolu- tion of detail. 'Perhaps some listeners will find the JC 1 too refined and perhaps a tad polite, but I didn't.' JA was equally impressed by how the JC 1 performed on the tones. "This is excellent measured performance. The Halo JC 1 is not only the best amplifier to come from Parasound, it ranks up there with the best high-end-high- "ro whom..."'s. Says ST, adding that with the amp driving the 'Triange Magellans, he found the "...was firm up, the sound wasn't strained in any way, and there was an overall sense of ease. Dynamic ease. Listening ease. Cure ease. Compared to the Halcors, the Parasound JC 1s.' It's a combo of potent mcmagmcnt and electorate lassitude. And the amps weren't even broken in..." Stereophile's and Sam Tellig's — "Joint Amplification Component for 2003." (Vol.26 No.6, 2 & 12 WW)

Pass Labs XA 160: $18,000/pair

Specified to deliver 80Wpc into 8 ohms. This 201Wpc solid-state monoblock ranked only 118Wpc on JA's test bench, due to what we were subsequently told was a manufactur- ing fault. Nonetheless, the XA 160 sounded "sweet, delic- ate, and rich," with an overall presentation that was vocalable, velvety, and with "an overall sense of dynamics and tubes and..." MF commented on the XA 160's ability to capture the wholeness of an event rather than focusing on musical details. The XA 160's slightly subdued overall character imparted a sense of relaxation and how without sounding Thudd-en-dark. Still, "immeasurable performance left JA scratching his head and advising that "Combinations of low-impedance speakers vs large mono block should be avoided with the XA 160." (Vol.26 No.11 11 WW)

Plemius SA-10: $4955 $$

The 140Wpc, direct-coupled, dual-monaural transistors only in its out- put stage to emulate the way sounds behave in nature: ST: "Harsh definition and extension were excellent. So was the overall resolution. I heard zero bottom-end control and a very sweet, smoothly extended midrange and treble." The XA 160 up to a "good turntable with a bit of out- sounding rasson and low resolution and fine detail."

Sands wondered, however, if it might be so polite: "With the Plemius SA-10, I felt that things were being smoothed out over slightly tarned up some of the music's dark, black, and bite... I missed some of the vibracity and life that I hear with great midrange... leaving in the detail that was erased by the music."

Nonetheless, "For [S$550], you get superb performance. Excellent build quality, and the smoothest midrange and treble side this type of tubes." (Vol.26 No.5)

PS Audio HCA-2: $1600 $$

The 100Wpc HCA-2 is remarkable in using a switching (PWM) output stage. ST: "The HCA-2 was remarkably free of the rich, overtone, sometimes woolly sound associated with tube amplifiers. There was plenty of bass, but it was extended and tight, not 'all over the place,' The treble was superbly extended... not rolled-off, the way valve amplifiers can sometimes sound."

"It had sound," he noted. "With the Plemius SA-10, I felt that things were being smoothed out over slightly tarned up some of the music's dark, black, and bite... I missed some of the vibracity and life that I hear with great midrange... leaving in the detail that was erased by the music."

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Nonetheless, "For [S$550], you get superb performance. Excellent build quality, and the smoothest midrange and treble side this type of tubes." (Vol.26 No.5)

Air Tight AT-211 monoblock: $11,000/pair

A single-ended triode design that uses a big, "impressively looking heat" of a 201 outlet tube. Low in power 22W — but worth the price, felt RJD: "Beautifully built, the AT-211 has a touch of the exotic in its appearance, and offers outstanding transparency, total neutrality, soundstage width and depth, and dynamics that make it sound like a much more powerful amplifier." While RJD was reluctant to endorse the AT-211 for speakers whose sensitivity was less than 94dB, he concluded that it was "one of the most remarkable amplifiers I've ever had in my system." (Vol.25 No.10 11 WW)

Audio Research VS10: $7495 $$

The 100Wpc stereo VS10 uses eight 6550EH output tubes and five 6N1P input/driver tubes, and differs sig- nificantly from earlier ARC design in its use of many smaller, faster, reservoir capacitors rather than larger, single capacitors. RJD: "This is a very easily powerful ampli- fier that combines the musicality of tubes with the dynamic and bass extension that characterizes the best solid-state designs. It has a well-integrated soundstage, satisfyingly high levels." VA: "The VS10's measured perfor- mance strongly indicates that it is an excellent output transformer to be used for its owner's speakers." (Vol.26 No.8 11 WW)

Audio Research DSX-1: $9970/pair

This 30Wpc single-ended pentode with Perfect Triode-
The BAI-600 reference-line balanced interconnect is a stunningly elegant tour-de-force of engineering, process and presentation designed for the truly discriminating music lover who has almost everything.

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The VA-5 is a 75Wpc update of the classic VA-6D with a "smooth, easy-on-the-ears quality," decided RD. VA-75SE [58] uses the 6H30 Superb and improves on the standard amplifier in midrange and mid-treble smoothness, as well as its general all-round performance. The VA-75SE, wired for monophonic VA-150SE, J-10 baffle. IAT has reached the pinnacle of minature and finest line and now: He noted a bass presentation characterized by "deep, delicately powerful, strong fundamentals going the heck down, was quite Resolve" from the VA-75SE to the lower midrange that was "tight," "tight," and "full." As for the soundstage, "the crossovers of air around each performer, the utter tone of timbre, the glow from within, the swing and timing that tubes do so well — all were better with tubes..." RD, only this. "A first-class amplifier... Does the VA-150SE sound the price? In every single way there is to judge such amplifiers, the recording and engineering conclusion is: yes." (Vol.24 No.7, 75 & 75SE, Vol.25 No.3, 150SE W.W.W.)

**Cary Audio Design: CAD-280SA A/V 12: $2550**$S

The CAD-280SA V12 is really four single-ended class-A amplifiers operating on a single chassis in a combined balanced configuration using EL34 tubes, zero feedback, and big, hot-running transformers! It's switchable from all-sound (sound best at 50Wpc) to ultra-linear running (more at 100Wpc). With the Cary monitor: more all-tube modal, J-10 thought one recording of Ray Brown's has a sound wonderfully rich, full, and deep, with an enormous soundstage. Fabulous midrange, he decided, with an airy soundstage draped over deep and complex tone, as well as a clean, strong, clear midrange-geared, and the speakers completely disappear. "Need some soup for a party? Flip the switches over to ultra-linear operation for a healthy kick-ass into HP. Get your shifters on and set a nice cabinet next to you to go all-tube and feel the love. "Performing quite well on the test bench," said JA. (Vol.24 No.6 W.W.W.)

**Cary Audio Design CAD-805C monoblock: $8995/pair**

Single-ended triode 50W design. Driver and output tubes EL34. JA's review was a quixotic review. (Vol.24 No.3 75SE, Vol.25 No.1, 100WPC W.W.W.)

**Hovland Sapphire: $7800**

"MF couldn't stop praising its blue-light, 40Wpc, two-channel amplifer. Aside from its gorgeous looks, A.M.F. found it to be "one of the best-balanced amplifiers" he'd ever heard. Its overall presentation was "velvet, velvety detailed," marked by a "lush, full-bodied sound" that seemed "complete and resolved" to the last. The soundstage was "always wide," and the sound was "plunging and more boring," it "lacked the last word in air, ambiance, and openness." Indeed, the most stunning weak points was in the depth of its soundstage. MF: While it produced exquisitely three-dimensional images, its sound-stage depth was anything but 3D. The amplifer's ability to separate images depth-wise and to portray depth of fields was limited. Nonetheless, "The Sapphire got the most out of innumerable theatrical presentations were world-class." JA's measurements, however, revealed flaws. "Just hyped up a bit," the A.M.F. mean it all has to have hums, an ultrasonic resonance, or fairly high levels of distortion. (Vol.25 No.3 75SE W.W.W.)

**Josue Elektro Stanton monoblock: $6100/pair**

(This 90W PC SET monoblock uses a Balanced Differential Mid Speaker, and was reviewed by JA. (Vol.24 No.6 W.W.W.)

** McIntosh MC2102: $6100**

It's big, big, it gets matrixes, and it retails at $710.50, which brings the McIntosh MC2102 to $6100. While the McIntosh MC2102 produces a "壯" soundstage, the 50Wpc were great at giving PH "not the sound but the feel of the all music he played through them. Switching between 150Wpc and 210Wpc in stereo modes didn't change the 250's character much, though PH, but "Triode mode had a wonderful intimate sound, more rich, warm, live, and wide," PH. "Even if you're going to reduce the 250's output, with slightly reduced back-off of the stage..." With big rock and orchestral recordings, there was a lot more transparent sound and immediacy in stereo, but the music, jazz, and small ensembles recorded in less imposing spaces, the tone glide was the way to go." (Vol.25 No.6 W.W.W.)

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Go Mac Go! (Vol.24 No.5 WWW)

Music Full lines $550

Fully balanced, 100 Wpc, hybrid design uses a bipolar transistor input stage with tube driver and output stages. Internally, the presentation, MF was greatly impressed by how close the R-20s came to his reference No-View 300 in its spatial presentation. Of all the speakers he auditioned, the R-20s were perhaps the closest.

The Brinkman Integrand $3500

The 75 Wpc Integrand comes as a passive input stage with transformer-balanced output operation. JM: “The Brinkman exhibit all of the firmness and the subtle undercurrents. The result is a well-controlled, transparently accurate, and ample bass. He also commented that it was also “a very quiet amplifier, in terms of both lack of transistor red at idle and retrieval of low-level musical detail.”)

Chord CPM 3300: $10,630

This nifty horn-running 200 Wpc model with a switching power supply had a “high-end and home-theater brain,” according to MM: “I own instructions made Mike cite Kransky. He found the British Cion’s performance superlative, big, vivid, and exhilarating. Compared to its reference, it sounded “very soft to the surface, while offering up more body and solidly to images and greater transient snap.” The Chord was fast, sporting “an intense rhythmic drive and a clean, taut sound that continues to very familiar recordings. The CPM 3300 reproduced all it available without mechanical, bright, harmonically bleached, or anemic. Did it deliver the warm and harmonically fullness of a good tube amp? No. Do most tube amps deliver the Chord’s sound? No. But is it performant and fast, well-damped box? No. If you like your musical presentation big, dramatic, fast, and exciting, the Chord will give you to your without adding the usual textures. Integra leg option — essential for optimal cooing” — adds $550. (Vol.24 No.5 WWW)

Creek 5350SE: $1500

Solid-state, remote-controlled $85 Wpc Integrand with passive preamp stage and extensive remote control ability. Headphone output, but no balance control. BJR found the SE neutral throughout the frequency range, with “like-like” niceness and “tuneful to feed and any familiar recordings. The 3300 reproduced all its audible mechanical, bright, harmonically bleached, or anemic. Did it deliver the warm and harmonically fullness of a good tube amp? No. Do most tube amps deliver the Chord’s sound? No. But is it performant and fast, well-damped box? No. If you like your musical presentation big, dramatic, fast, and exciting, the Chord will give you to your without adding the usual textures. Integra leg option — essential for optimal cooing” — adds $550. (Vol.24 No.5 WWW)

Magni Dynalai MD 208: $2975

Remote-controlled 100 Wpc solid-state receiver with all-analog FM tuner section, five line-level inputs, and separate main and preamplifier sections. The M-208 took power to the heart of the economy segment.

McIntosh MA6900 $3000

The 200 Wpc MA6900 takes a decide to the output stage, and is the MA6900 $3500. It is a state-of-the-art machine, with high-precision tonal balance, and is deep and controlled, with a closely, but not too much, and very well balanced. It is a deep, rich, and well-controlled, with a wide range of the added warmth/medium emphasis and softness that many people

recomended components

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stereophile, April 2004
**RECOMMENDED COMPONENTS**

**PREAMPLIFIERS**

- **20/20**
  - Preamplifier
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**MUSIC SOURCE COMPONENTS**

- **Arcana**
  - Quicksilver Horn Monoblock $1595/pair
  - MF205A Power Amplifier $6000

**SPEAKERS**

- **Ayre AX-7**
  - Solid-state, two-channel, full-balanced integrated amplifier
  - $2950

- **Unison Research M-200**
  - Power Amplifier
  - $4795

**PORTAUDIO PANACHE**

- **Simaudio Moon i-5**
  - $2090
  - Sold with Tube Sets

**Stereophile**

- **Sugden Audio A32.1**
  - $1595

**Union Research Unico**

- **Unico**
  - $1695

**RECOMMENDED COMPONENTS**

**PREAMPLIFIERS**

- **PrimaLuna E800**
  - Preamplifier
  - $2995/pair

**MUSIC SOURCE COMPONENTS**

- **Audio Note**
  - Soundstage Monoblock $4900

**SPEAKERS**

- **Ayre AX-7**
  - Solid-state, two-channel, full-balanced integrated amplifier
  - $2950

- **Unison Research M-200**
  - Power Amplifier
  - $4795

**PORTAUDIO PANACHE**

- **Sugden Audio A32.1**
  - $1595

**Stereophile**

- **Sugden Audio A32.1**
  - $1595

**Union Research Unico**

- **Unico**
  - $1695

**RECOMMENDED COMPONENTS**

**PREAMPLIFIERS**

- **PrimaLuna E800**
  - Preamplifier
  - $2995/pair

**MUSIC SOURCE COMPONENTS**

- **Audio Note**
  - Soundstage Monoblock $4900

**SPEAKERS**

- **Ayre AX-7**
  - Solid-state, two-channel, full-balanced integrated amplifier
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  - $1595

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- **Unico**
  - $1695

Marked by an "intensifying" build quality and "luxuriant" looks that contrast its modest price, the 7000A Unitric had ST running. "I could scarcely believe I was listening..."
Stereophile, April 2004

RECOMMENDED COMPONENTS

Awriters note: Class A "loudspeakers" are sufficiently idiosyncratic and differ enough from one another that I've felt it useful to include a special section for them. The Editor's Note should be better to have a definitive guide to what the world's opinion is about the popular reviews in this category. For that reason, I have listed every system in this category that has been reviewed in the past year, and I have left the reviews as they were written. I have not added any new reviews to this section. For the uninterested reader, there are now a few reviews of the best low-cost systems available. I have attempted to include these in the review of the best low-cost systems available. I have attempted to include these in the review of the best low-cost systems available.

LOUDSPEAKER SYSTEMS

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Quite simply... the world's best audio electronics.

M1.2 Reference amplifier (Anniversary model)
M2.2 amplifier (Anniversary model)
ML1.1 amplifier
ML2 amplifier
LL2 preamplifier
L2 Reference preamplifier
LP2 phono preamplifier

Class A in Recommended Components, Stereophile (1995-Present)
Reviewer's Choice, Soundstage.com (1998-Present)
Class 1 in Recommended Products, TAS (2002)
Best Sound at the Show (Stereophile, Soundstage.com)

What makes the Lamms so special is ephemeral, beyond being pinned down by mere words, but it can't be missed by anyone who loves music delivered with heart and soul.

Paul Bolin, Stereophile (April, 2003)

2621 East 24 Street, Brooklyn, NY 11235 U.S.A. (718) 368-0181 tel. (718) 368-0140 fax lamm.industries@verizon.net

In life, there is compromise.
In love, there is compromise.

Music...... no compromise


Canton Karat Reference 2 DC: $10,000/pair

JA: The Canton's smooth but somewhat treble-forward balance will work better in larger, well-damped rooms than in small, sparsely furnished rooms. With its powerful-sounding low frequencies, clean and grainless treble, the Karat II is a very powerful-sounding loudspeaker, which is clean and grain-free in the midrange. High sensitivity and dynamic range, and stable, precise stereo imaging, make the Karat Reference 2 DC easily justify its flagship position in Canton's range. (Vol 26 No 1 W W W)

Dali Electronic DALI M5/S Special Twenty-Five: $1,000/pair

The DALI M5/S houses two 8" woofers, a 3.5" midrange, a dome tweeter, and a ribbon tweeter in a cabinet that stands 50" tall and weighs more than 150 lb. The Dali M5/S is a very powerful-sounding loudspeaker, with its clean and grain-free midrange, high sensitivity and dynamic range, and stable, precise stereo imaging, make the Dali Special Twenty-Five easily justify its position in Dali's range. (Vol 26 No 1 W W W)

Dynaudio Confidence C4: $16,000/pair

The Dynaudio Confidence C4s are a very versatile loudspeaker in compact sizes, with its clean and grain-free midrange, high frequency transparency and lack of grain, and its well-defined, stable stereo imaging, more of which can be read about in D T S's review of the company's latest introduction, the Confidence C4s. (Vol 26 No 3 W W W)

EggelstonWorks Andra II: $18,900/pair

The goal set for the Andra II was to give the original Andra more accurate amplitude response, higher efficiency, deeper bass response and a major increase in overall transparency. Previous models included extensive changes in cabinet, an entirely new crossover, new voicing, and modifications of the drivers. Despite P D F's efforts to get the Andra II to the market in time for the show, there were still some very grainy, opaque, and misaligned crossovers, which are now being corrected. Andra II is a very powerful-sounding loudspeaker, with its clean and grain-free midrange, high sensitivity and dynamic range, and stable, precise stereo imaging, make the Andra II easily justify its position in EggelstonWorks' range. (Vol 26 No 10, Vol 25 No 1, Vol 26 No 11 W W W)

Isophon Europa II: $13,200/pair

Joseph Reynolds in his review of this speaker said:

"RS said that "Jeff Joseph and Richard Middleman have accomplished something special with the RM33s. In an "Infinite Slope" design the loudspeaker was recorded at 2 kHz with the tweeter connected in parallel. What sounded was the RM33s at 1 kHz with the bass woofer remaining in circuit. To be sure, the RM33s has a unique character that can only be found in a speaker that is designed and built in this manner. But the RM33s was built with the speaker's musical communication in mind."

JA: While the RM33s has a very wide frequency range, it has a solid, balanced and well-defined midrange, and a very clean and grain-free treble.

Krell LAT-1: $37,500/pair

Krell's first loudspeaker is a six-driver, three-way floorstanding model. The LAT-1 is very powerful-sounding loudspeaker, with its clean and grain-free midrange, high sensitivity and dynamic range, and stable, precise stereo imaging, make the LAT-1 easily justify its position in Krell's range. (Vol 26 No 1 W W W)
Confused by conflicting claims for the new SACD and DVD-A high-resolution audio formats? Each is garnering support from music producers, with a steady stream of new titles coming out for both. Fortunately, you don’t have to choose. The McCormack UDP-1 is an audiophile quality universal audio/video disc player, designed to extract the full potential of both of these high-resolution formats. The UDP-1 will recognize and play CDs, CDRs, SACDs, DVD-As and DVDs. The only decision you need to make is your selection for the evening’s entertainment.

Simple - the way home entertainment should be!
Merlin VSM Millennium: $8960/system

"Something amazing happened," declared ME "like the autochrome color-finish and the metal inlay strips, and the VSM Millennium is your basic two-way vented box—a floorstanding monolith." Outboard HAM bass equalizer, available in both single-ended and balanced configuration, applies 5.2dB of bias correction. A check at the con of the cabinet is filled at the factory with 23 lbs of sand, and, unusually, an outboard Zobel network consisting of a series Holland capacitor and a resistance is placed on the speaker terminals. The Millennium Edition VSM is distinguished by the buyer’s choice of wiring locations and number of other changes designed to maximize performance with solid-state ("S"version) or tube ("T" version) electronics. Sound MF: "What drew me in first was [the VSMs] smooth, airy, graceful top end, delicate yet detailed. It sounded down to the last detail without being syrupy or unsummoning. The VSM’s retrieval of microdetails was among the best I’ve ever heard from any speaker at any price. And with no glare or congestion. Dynamically? It conveyed plenty of dynamic punch, though it didn’t pack a really big wallop," declared MF. Price for premium finish and single-ended HAM with rechargeable battery ($3400).

Opera Callas: $2795/pair $$$ (stands necessary)

Matching stands cost $499/pair. (See ST’s review in this issue.)

Peak Consult InCognito: $13,000—$15,000/pair, depending on finish

Newly distributed by Stereovox, this two-way loudspeaker has a dedicated and nonremovable stand, which houses the crossover, plus more bass and transparency than MMs. JM: "The InCognito cabinet at least (though not deep bass), midrange smoothness, and coherence, and has a very warm and nonfarcical treble. Imaging and soundstaging are first-rate." Perhaps related to its lack of deep bass was JMC’s perception that the InCognito “really came alive with well-recorded and believable vocals with or without the frothiest of all tops.”

Quad C8 LTD: $16,295/pair

The Quad C8 LTD’s defining design element is its ribon- driver, a 4" by 6" coaxial planar design that covers the midrange and treble frequencies above 500Hz, while three 7" aluminum bass-reflex cones come to lay the foundation down. LG: “The C8 features a seamless blend of drivers, a beautiful appearance, user-friendly portability, superb audio persistence, pinpoint imaging and soundstaging, and the ability to live up to Quad’s legendary reputation for quality in the way its components are assembled and finished.” Kenny: “If you were to buy only one loudspeaker, this would be it.”

Quad ESL-988: $6500—$7150/pair, depending on finish

For those who must wall-mount it, for the second part, an updated version of the classic Quad ESL-3 (WWW). Write ST, “What more could an audiophile want than a pair of ESL-988s? You get world-class resolution, super-fast soundstaging, Spectacular transient response. And sound as neutral as it gets. The only thing you don’t get are very deep bass, the ability to play crazy loud, and sexy styling.” Improvements over the ESL-3 include a stiffer, more rigid frame, better-quality wiring in the delay lines, and higher-quality copper in the electrodes. ST found that these attributes “improved midrange and upper-midrange extension and better bass.” Nonetheless, he felt that these are not speakers for hard rockers. But those who owned the ESL-3 will surely be fond of the 988. (Vol.24 No.1)

Quad ESL-989: $8500—$9350/pair, depending on finish

The holster-ESL-989 adds two bass ports to the 988, which is the current version of the classic ESL-63, and is said to have higher power handling. Nonetheless, LG found that music that exceeded levels of 98dB triggered charges and the ESL-989s skin to "‘the moon’s". LG’s listening room with "‘lots satisfying bass," and added outstanding midrange response, transparent imaging, wide-angle soundstaging, unobtrusive, focussed, low distortion, and low listening fatigue." While the speaker rolls off gracefully, it has a fatiguing bass response. The lines are too heavy at lower bass, but as per expat tracking on repeat peaks — and large-scale orchestral works are its best friend, said LG. The soundstage is exceptionally wide and deep, focused, transparent, with high resolution and precise imaging. The midrange balance is well-regarded, the soundstage is non-restricted, but does taper off at 50Hz. "In every other respect, the performance of the Muhler is state-of-the-art." (Vol.23 No.4 WWW)

Wilson Audio Specialties Sophia: $11,700/pair

JA had great expectations for the Sophia right from the start, and in no way he was disappointed: The three-way, floorstanding, reflex-loaded loudspeaker had a way of reproducing the wide dynamic sweep of a symphony orchestra in full flower that left him captivated. "I felt there were no limits to the ability of the Sophia... the dynamic range was "natural," and the bass region "laid bare with every little inflection." JA had only one minor criticism: The speaker’s total balance was slightly forward in the mid-treble, leading to a soundstage that was not as deep as he thought it should be. "Most users might also be a bit excessive in some rooms, he warned. Nevertheless, "The Sophia is the best value-for-money speaker to come from Wilson Audio... It raises the bar for the almost-twice-the-price WATTY Poppy." (Vol.25 No.7 WWW)
of dynamics at both ends of the scale, low-level transients, definition of inner detail, harmonic integrity, transparency, and every other performance parameter, the Mid-Grand delivered the goods. (Vol. 26 No. 1 W W W)

Legacy Audio Focus 20/20: $6498/pair $$$

The Legacy uses seven drivers in a five-driver configuration, stands 55" tall, and weighs 186 lbs. Combining relative simplicity with performance, it's highly adept at resolving low-level detail to perform well with large-scale power music, whether rock or classical. PH: "The Legacy Focus 20 is a genuinely full-range speaker in every sense; its frequency response, dynamic capability, and overall musicality and sense of musical communication can fairly be compared to other speakers costing far, far more... Combine the 20's 20''s outstanding overall performance with its efficiency, easiness to drive, and quality of handcraftedness, and the result is the finest tone I have ever encountered in high-end audio... Borderline Class A. (Vol. 27 No. 1 W W W)

Opera Quinta: $2995/pair

See ST's review in this issue.

Opera Super Pavarotti: $1995-$2995/pair

The floorstanding Opera Pavarotti lists all the characteristics of fine, careful Italian craftsmanship. ST went into detail: "Superb finish. High-quality drivers. Credible sound that, for one, could live with for years. And reasonable selling price. A loudspeaker is furniture, after all. You have to look at, not just listen... The upper midrange and bass were well extended, and the tweeter worked as well. The midrange was "very dynamic, quite tight, and extended, without bloom," and the soundstage was "very wide, deep and balanced." ST cautions that "The Super Pavarotti is not for those who crave hi-fi excitement... This speaker sang, it didn't ring." (Vol. 25 No. 9)

PBN Montana SP3: $3995/pair

BW: "PBN's second major revision of the SP is better than the original in every respect—and bigger, having gained 1" in height, 3" in width, and 1" 1/2 in depth... The new drivers are well designed, larger, $1500 of them, and a 1" fabric-tweeter, and the crossover has metz-ellinized polystyrene caps, to improve driver overlap. The SP's power handling is rated at 180 W at 80 Hz or the original's 160 W, and the low-end cutoff is now specified at 30 Hz or the original's 35 Hz. The SP offers up the essence of the music with all the punch, air, and detail audibility demands, and all the soul music-lovers need. It is ideal for rooms of medium to large size, and its profile. clean and elegant finish will be commensurate with any style of decor. As a home-theater loudspeaker, it is a victory that can lead to a stimulating musical experience..."

PSB Platinum T8: $6999/pair

PSB's line of loudspeakers, which boasts the Canadian manufacturer's deepest, biggest bass, is now deeper, bigger, more powerful, and more expensive: The Platinum line, which replaces PSB's Twenty-Five: The Platinum T8, T8, T8, HAR, John Storer's new flagship design, offers two tweeters, two 4.5" midrange units, and three 8" reflex-loaded woofers. Total balance was "a little on the cold side" and there was "some liveliness in the presence region, though, strong definition, however, was excellent, and the T8 got the midrange just right, "preserving the individuality not just of voices but of musical instruments as well." JA had some trouble balancing bass weight against upper-midrange: "Its balance will need some care taken with system matching and small rooms, which will emphasize the mid-range lead and are probably best avoided." (Vol. 26 No. 11 W W W)

Sonus Faber Cremona: $7495/pair

A Three-way, reflex-loaded, floorstanding design, with a 1" ring-radiator tweeter and twin 6" woofers. The midrange and treble had the expected Sonus Faber range, but the bass lacked the mid-range distinction with not a hint of hardness. Bass and treble were well extended and the overall sound was "clear and pure... crisply articulated without being overemphasized." Sam does wonder if the Cremona "is too nice-sounding." Brockel suggests: "However, the bass is rather extraordinary (though you do have to work with minimum positioning)." The drop-dead gorgeous Cremona offered a soundstage that "was expansive yet tight and well-defined, without any image bloom," confirmed JA.

The treble was clean, airy, and smooth, the midrange uncolored, and the high frequencies were excellent for a speaker of its price range. This mix of colors was a slight leaning toward the upper midrange, some piano notes sounding more forward in the soundstage than others. Overall, however, JA echoed ST's enthusiastic recommendation: "A superb performer. Highly recommended... The Cremona is one of the most interesting speakers we've ever heard." (Vol. 27 No. 3 W W W)

Thiel CS6: $7900/pair

"The CS6 offers high perceived value," JA said. "It is a beautifully constructed, well-balanced, and, once set up properly, with a got-in-all-films and high-quality sound, sound simply superb... The midrange was especially fine, and clean deep-bass presentations gave the music a powerful foundation." However, "the midrange didn't offer quite the same degree of clarity or cleanliness that distinguished the bass or treble octaves... But for me, at least, this was a matter of taste, in the same way that the Thiel did right." But it does keep the CS6 from scaling the Class A heights. Like JA, ID found that the Thiel did not remind us to set up many hours of positioning needed to get the balance right. However, once everything was set, "the CS6's sound is almost perfect." Unlike JA, ID found midrange "suffice... Their overall balance was very good, their handling of dynamics was even—and superb—from top to bottom." (Vol. 21 No. 3, Vol. 26 No. 10 W W W)

Totem Acoustic Forest: $3000/pair

Two-way, 3-high tower loudspeaker. The Cen is standard, a sealed cabinet that is available in black, brown, or white; the new Cen Extended, a reflex version of the Cen. JA's review of the Cen Extended was slightly less enthusiastic than for the original: "The overall sound was very good, their handling of dynamics was even—and superb—from top to bottom." (Vol. 21 No. 3, Vol. 26 No. 10 W W W)

Totem Acoustic Mani: 2: $3995/pair (stands necessary)

JA: "A little less forward in the midrange, but very well-balanced, and with a slightly more forward bass, the Mani-2 is a smaller, more balanced, and musical speaker, which will be a much better match for smaller rooms... JA rates the Mani-2 as a "very good" loudspeaker, with a "dynamic, well-balanced, and musical" sound." (Vol. 24 No. 4 W W W)

Totem Acoustic Mani-2: $3995/pair (stands necessary)

JA: "The Mani-2 is a small, but very well-balanced, loudspeaker, with a very well-balanced, and musical sound. The overall sound was very good, their handling of dynamics was even—and superb—from top to bottom." The Mani-2 is a smaller, more balanced, and musical speaker, which will be a much better match for smaller rooms... JA rates the Mani-2 as a "very good" loudspeaker, with a "dynamic, well-balanced, and musical" sound." (Vol. 24 No. 4 W W W)

B&W 705: $1500/pair (stands necessary)

The moderately sized, two-way 705 replaces B&W's 702 D2. JA: "I have visited the 705 in B&W's large listening room, and the 6.5" woofers made it possible to get into the 705's great performance... The overall sound is very good, and the soundstage is very wide, deep, and balanced... JA rates the 705 as a "very good" loudspeaker, with a "dynamic, well-balanced, and musical" sound." (Vol. 22 No. 10 W W W)

Dynaudio Special Twenty-Five: $4800/pair (stands necessary)

The Special Twenty-Five borrows technology from Dynaudio's top loudspeakers. JA: "How do they sound? Fabulous... But with high-quality parts, conservative (first-order crossover) design, and flawless execution, what's not to like?" The Special Twenty-Five is a great-sounding loudspeaker, with a very well-balanced, and musical sound. The overall sound was very good, their handling of dynamics was even—and superb—from top to bottom." The Special Twenty-Five borrows technology from Dynaudio's top loudspeakers. JA: "How do they sound? Fabulous... But with high-quality parts, conservative (first-order crossover) design, and flawless execution, what's not to like?" The Special Twenty-Five is a great-sounding loudspeaker, with a very well-balanced, and musical sound. The overall sound was very good, their handling of dynamics was even—and superb—from top to bottom." (Vol. 22 No. 10 W W W)
satisfying manner. The listener must sit fairly close to gain best soundstage and presentation. (Vol.26 No.6 W/VW) Focus JMlab 3.5 Satellite: 186 S: $189.50/pair Focal JMlab Cobalt 806 S: $1095/pair $$ (stands necessary)

Two similar speakers, one floorstanding, one stand-mounted that uses the same 1" Ti/Co tweeter as the Electro 926, and the 6.5" bass/midrange driver as the "Vincent," sandwich cone membrane from JMlab's Utopia series. Of the 86.5, ST said that he heard "an exceptionally wide and deep soundstage, with precise imaging and excellent center imaging," a midrange that treble and that was also "excep-
tional," and a sound that was "delicate and detailed, very, very smooth." He was most impressed by the 86.5's "electrostat-like speed." Drawbacks included the "inescapable rat" noise in the bass, and limited loudness. Of the 816 ST commented that he heard that "the same set of virtues that I'd noted with the 806 S... along with some welcome bass extension. But I didn't hear quite the holographic image that I got from the stand-mounted monitors. For nearfield listening in a smaller room, I'd give first consideration to the 806 S. For listening in a larger room, and further away from the speakers, I might give the nod to the 816 S." Both are "clean, clear, quick. The way I like it and the way to go," he sums up. (Vol.26 No.9)

Harbeth Compact 7ES-2: $2495/pair $$ (stands necessary)

One of the original models of 1988, the Compact 7ES-2 now features the 1" Kevlar/Aluminum dome tweeter and a 1" ferrofluid-cooled, magnesium-alloy dome tweeter to achieve traditional BSC sound. Though they offer relatively low bass and lack some of the deepest bass, Harbeths "sang and imaged like crazy" while offering "total freedom from listening fatigue." ST: "Rock fan and others looking for excitement can go elsewhere. Those looking for musical involvement with more seri-
ous musical gear, the monitors are superb. Even at elevated volumes, ST felt too much, so I felt I could almost pinch each manufacturer's ass..." The Harbeth Compact 7ES-2 is one of the 10 or so favorite speakers I've encountered in more than two decades of reviewing. "Maybe not the last word in low-level ext... otherwise the Harbeths would be Class A all the way. Add $200/pair for stands." (Vol.26 No.12 W/VW)

Joseph Audio RM7i Signature Mk. 2: $1799-$1999/pair, depending on finish (stands necessary)

JD decided that the original 7i was a "well-balanced (but naturally detailed) monitor that represents good value. Of the Signature version, the word that popped up most often in JA notes during auditioning was "sweet." He also noted that the RM7i was "as sweet as the RM7i" on which it was evaluated. Interestingly, Bott's tone was quite different, as was the RM7i's. The former was a bit thinner, with more detail and image. The latter had a bit more of the RM7i's signature. There was more weight in the tonal balance and impact, greater transient speed and dynamics, with enhanced midrange presence, detail and focus. Better yet, the top end seemed more fleshed-out and extended, which contributed to the better soundstaging depth and height. But the signature is definitely the "signature of the year." (Vol.25 No.10 W/VW)

Morelet Octiv 5.2: $1400/pair (stands necessary)
The Octiv 5.2 is a two-way system featuring a 5.25" reflex-loaded plastic-cone woofer and a 1" silk-dome tweeter. To make an Octiv 5.2M system, one set of Octiv 5.2 speakers is inverted and placed atop a second set. The tweeter modules separate by ST-11 stands. Imaging was stable and accurate, total bass was warm and melos, treble was smooth and uncolored, and bass extension was good,如果不是被听音室的环境和音色所影响，它会表现出色。Lowther's "A word on-axis position," low-bass, midrange, and treble are the strongest aspects of the Octiv 5.2M. The tweeter modules separated by ST-11 stands. Imaging was stable and accurate, total bass was warm and melos, treble was smooth and uncolored, and bass extension was good, if not best. ST heard that "the overall stage was balanced, fairly smooth, and decidely not off-bass." The bass was full but not overly powerful or extended... Treble details were adequate without noticeable brightness, but from time to time the piano note or similar sound would jump out. Spatial presentation was fine. (Vol.25 No.12 W/VW)

Jean-Marie Reynaud Arpeggione: $1590/pair $ Airflow loudspeaker, with 6.5" mid-woofer and 1.5" soft-dome tweeter, the individual Arpeggione was supposedly designed to co-create the experience of a full-sized loudspeaker in a room. It was a "true, clear, accurate, and wonderful sense of musical richness and fullness," found ST. While it was exciting and easy to listen to, he was not impressed by the speaker's transient information or high-frequency detail. It appeared very sensitive to system interaction, thus requiring much attention to associated equipment. (Vol.26 No.6 W/VW)

Meadowlark Audio HotRod Shearwater: $3935/pair

With their first-ever crossovers, don't sit too close to the Shearwaters, warned JA. However, sitting back 7'-9" created the "perfect" soundstage. The speakers were "very smooth, even and natural, transparent and coherent in the upper reaches of the treble." They seemed well balanced, with much detail and image. ST heard that "the overall stage was balanced, fairly smooth, and decidely not off-bass." The bass was full but not overly powerful or extended. Treble details were adequate without noticeable brightness, but from time to time the piano note or similar sound would jump out. Spatial presentation was fine. (Vol.25 No.12 W/VW)

Sunos Caber Cremona Audience: $3595/pair $ (stands necessary)

Features the same line-shaped cabinet and stretched-string grille as the Florostaline Cremona with a slightly different 1" ring-radiator tweeter and a 5.85" doped-paper midrange/cone driver. The Audience was "an excellent charac-
terist for an only moderately inflated budget." While being "superbly efficient," they "remained sufficiently bass-challenged." Bass response dropped below 80Hz. Some people will find it breathtakingly dynamic, one of the best "affordable" speakers for the $500 set, others will say it's bass-shy and aggressive. Both is right in your way. Their former camp AD would recommend them as low-class B (limited L.F.) but to the latter he'd represent it as low Class C or even D Class. (Vol.26 No.5)

Sonos Caber Cremona Audience: $3595/pair $ (stands necessary)

while "the overall stage was balanced, fairly smooth, and decidely not off-bass." The bass was full but not overly powerful or extended. Treble details were adequate without noticeable brightness, but from time to time the piano note or similar sound would jump out. Spatial presentation was fine. (Vol.25 No.12 W/VW)

The Now-discontinued 806.5, a £1700/ pair, was a "true, clear, accurate, and wonderful sense of musical richness and fullness," found ST. While it was exciting and easy to listen to, he was not impressed by the speaker's transient information or high-frequency detail. It appeared very sensitive to system interaction, thus requiring much attention to associated equipment. (Vol.26 No.6 W/VW)

Mirage OM7: $2200/pair $ Mirage debuted the "deep, clean, clear and smooth" soundstage of the OM-7s. "The soundstage didn't change much with changes in my position in the listening area or even if I moved around the room." He was most impressed by the depth and power of the OM-7s bass. "Deep, clean, clear and smooth," he noted. "The speaker's treble cabinets were not unusual." His recommendation: "If you've got a room that can handle deep bass and isn't too lively and you like a more natural, relaxed take on the stereophonic imaging thing, then the OM-7 is defi-
tly for you." (Vol.26 No.11)

RBH 61-SE: $1499/pair $ (stands necessary)

Initially, JA was bothered by this thin floorstander's low frequencies. Mid bass was sufficient, and extension was apparent down to the 40Hz 1st-octave band, but the bass never sounded fully controlled. The woofer's magnetic polarization was problematic, providing better upper-bass definition. Top
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Complete specifications, reviews, and owner’s manuals are available on our web site.
The small, floorstanding Sphinx is made "to absolutely high levels for this kind of money," commented A.D. Being of much lower average quality, the $195/"pair was not the same sense as one, the same sense of exciting the music in a completely natural, organic way, as some more sensitive speakers, wrote A.D. "The Sphinx's greatest strength was its ability to be driven at least reasonably well by only a few speakers, and when tuned as tightly neutral and spanned, convincingly at much less efficient — and more expensive — perfectionist loudspeakers. "A bright-lightweightness but communicative and entertaining," according to J.M. "This comes to life if played loud," adds LG. A.D has the final word: "An easy, safe, tonetically faultless, and musically satisfying recommendation for the average listener." (Vol.25 No.11, Vol.27 No.11

Monitor Audio S2$$: $749/pair (stands necessary)

This small, reflex-loaded, magnetically shielded tweeter-mid range-coupled to a 7" cone, is an example of the CCM aluminum-magnesium alloy. The S2's most obvious characteristic is its mellow tone, accompanied by a respectful low-level of coloration and clean upper midrange. The lower midrange is also very neutral, and the upper bass is a bit exaggerated. Its stable, well-defined stereo imaging and dynamic strengths were outstanding. While I agree the speaker does have an identifiable character, being balanced on the warm, mellow side, this is probably a good thing, given the music's electronic tendency to have grey re-creating arrangements. While I cannot identify the speaker's design, other similarly-tuned, not so expensive, Creedence-clearwater-traveller will be noticed, and is very well-finished considering its affordable price." (Vol.26 No.8 W.W)

Mofo Audio Cicada: S95$/pair

Uses a 7" full-range, dual-cone, Loofah-like driver with a small voice-coil gap and moderately large inner assembly. Despite not being a horn design, the Cicada had a very high sensitivity (92.5d.B/I 2.83V/m), and its impedance remained above 11 ohms. The Mofo was a very direct and honest speaker, reproducing all varieties of music, and sounded convincingly at even low and medium listening levels. However, notes below 100 Hz had a "slightly puffy quality, lacking in both color and impact," and, when listened to the Cicada directly on-sea, he heard "a strange后glow" that was very distracting. The Mofo Audio Cicada and the Horn Shoppe Horn, the Cicada was more dramatic, and did the best job of portraying contrasts. (Vol.27 No.1 W.W)

Paradigm Reference Studio/265$590/"pair, depending on finish (stands necessary)$959/"pair

"From the uppers to the upper midrange, the harmonic structures of sounds, their timbres, were as natural as I'd heard from any speaker," BJR said. "The reproduction of vocals, woodwinds, and brass instruments on well-made, acoustically resonant recordings is in its reality," he continued. "The bass was "enormous, natural, quick, dynamic, taut," it had "a slight 'notch in the bass is the best.'" With the Cicada, the Mofo Audio Cicada and the Horn Shoppe Horns, the Cicada was more dramatic, and did the best job of portraying contrasts. (Vol.27 No.1 W.W)

Athena Technologies AS-55: $599/"pair

The AS, $599/"pair was designed to be used in the AS-2 right out of the box: "As the AS-2 presented an open, detailed, coherent, and neutral sound that reminded me of much more expensive floorstanding speakers. Though the speaker was "clear, articulate," and "well balanced," it was marked by "a detailed natural midrange," with "extensive, dynamic midrange." BJR was especially impressed by the AS-2's low-bass extension and definition. His only real complaint was that the speakers outperformed their price range, needing "to be matched with electronics of higher quality and price than one would normally associate with a $599/"pair speakers." (Vol.25 No.8 W.W)

JBL Studio S38 II: S599/"pair (stands necessary)

From the start, it was clear to BJR that the three-way, portrait was "the best of the lot," and it was "fairly priced." "Vocals and piano highlighted the speaker's superb reproduction of lower and middle midrange timbres, which were as natural and as transparent as any of the speakers. BJR was "very surprised by the S38/"pair's ability to sound big-

StereoPhile, April 2004
were.” The speaker’s enthusiasm in the upper midrange and lower highs may not be everyone’s taste, says BJR, but he was less equivocal about the lows. "The S38’s bass performance was mighty impressive. In my largelistening room I was able to achieve tight, clean bass extension down to 35 Hz, although I noticed slight ripples at around 500 Hz and 1000 Hz... there were two areas in which the S38 performed better than any other speaker under $200/pair I’ve ever heard: First was its ability to play at extremely loud volumes without losing detail or coherence... the S38 had the widest dynamic ranges of any budget speaker I’ve heard.” (Vol.24 No.6, SG1977 No.2 WW/W)

**Klipics RB-15: $3299/pair (stands necessary)**

This two-way, reflex-loaded, magnetically shielded, miniature uses a 5-2/5" two-way setup with a cloth woofer and a 1” titanium-design compression drive tweeter with a 5” square, 90° by 60° Tractrix horn. While the bass was a bit warm and indistinct, it was not unpleasant, and though there was some mid-bass swell, the overall treble sounded very smooth. The Klipics’ vocal point was its mid-range: clarinet notes jumped forward and piano notes sounded woody. JA: “Once I’d grown accustomed to its lack of top-octave energy, its lack of low-frequencies, and its rather ‘bumpy’ upper bass, the Klipics RH-15 offered more than a well-balanced sound at a very competitive price.” (Vol.27 No.2 WW/W)

**NHT SB-3: $660/pair (stands necessary)**

BJR: “I had never been impressed with a bookshelf speaker as I was with the NHT SB-3. It is an appealing total balance, lovely very warm, and, at its price point, sets a new standard for the characteristic design of the area of small resolution, bass extension, and dynamic articulation.” Last Stand speaker stands add $240/pair. (Vol.25 No.11 WW/W)

**Polk LS75: $820/pair (stands necessary)**

Paradigm Monitor 20: $249/pair $$ (stands necessary)

With this, the third and latest version of the Alpha, a long-recommended two-way bass-reflex bookshelf speaker, Paul Barton has tricked down some of the design and manufactured innovations of his more expensive studio monitor series. BJR was unimpressed: “The PSB is a classic example of the benefits of muck-dredge technology in a serious high-end speaker design. He found that the Alpha II “excelled with vocals,” provided “excellent articulation of subtilty transient and microdynamics,” and showed “excellent detail resolution and dynamic balance. One caveat: the PSB’s only real shortcomings was its limitations in high-level dynamics on passages that had considerably complex, highly modulated content, significant bass-range music. Nevertheless, BJR was pleased... and suggests that the Alpha II represent a significant step in the direction of construction and sound of these remarkable little boxes and checking the price yet again, I’m still shaking my head.” (Vol.25 No.5 WW/W)

**E Infinity Primus 150: $198/pair $$ ($ stands necessary)

(See BJR’s review in this issue.)

**Paradigm Atom 3: $189/pair (stands necessary)**

Though he was a bit put off by its very low price and very limited feature set as compared to other_atom-based speakers, the Atom’s 1” titanium tweeter was an impressive 20kHz uppermost frequency limitation. "The entire audio spectrum, although not as wide as the Atom’s own $3000 speaker, was well-delivered and uncolored... The Atom’s convincing reproduction extended into the mid-range with no loss of definition, weight, or impact.” According to the review, "the Atom was the first loudspeaker to reproduce perceptible transient clarity, and naturalness in the upper midrange and lower highs that reproduced percussive starting with realist.” Howev- er, BJR found that the Atom’s output was more pleasing, emphasizing a bit more in the lower frequencies, with less of an emphasis on the upper midrange area. Nevertheless, the Atom was able to play loud without losing detail. JA: “BJR's choice for a bookshelf speaker under $200 is the Atom's $3333. "Using Smallsonic HF-600 with custom balanced cables, J-10 found inturhly: "My involvement was total... quite an achievement..."
RECOMMENDED COMPONENTS

HeadRoom Corporation Supreme $499 SS
Small, beautifully made, battery-powered solid-state amplifier based on a proprietary surface-mount module and featuring switchable intracardial cross-feeding and time delay to render headphone listening to stereo programs less artificial-sounding. The offer of this is surprisingly audible in A/B comparisons, but nothing short of outstanding in long-term listening sessions. Includes a treble-switch boost. Drives dynamic headphones to high levels, with authority and excellent clarity, without this being associated with any brightness. JA bought a Supreme to drive his Sonus F各个环节 H38, with which it makes a very musical-sounding combination. His subsequent auditioning of the $499 Concise version suggests that it is, indeed, cosmic. (Vol.17 No.10, Vol.19 Nos.2, Vol.21 No.2, WW) see also WPs, review of the $299 HeadRoom Traveler unit (Vol.18 No.10 WPG

Sennheiser HD 580: $259.95 SS
Ultra-smooth, ultra-detailed, open-back dynamic headphones with full, extended low frequencies. Alvin Gold found the HD 580 to be “too civilized,” and WP says that some audiophiles rate the grain and other “nuis” suggesters that the Sennheisers simply don't exhibit. Comfortable. JA's dynamic headphone reference he heard was the Sennheiser 600. (Vol.17 No.10, Vol.19 No.2, Vol.21 No.2, WW) see also “Industry Update,” Vol.17 No.4, p.41; TTJ’s headphone reviewer Vol.17 No.2, p.14, and WPs review of the Sennheiser 5805 earphones in Vol.18 No.10)

Grado SR 60: $69.95 SS
The $500 offers rather dark-tined balance, with a full low and excellent resolution of detail. A more forward soundstage, however. UnCoronado. (Vol.17 Nos.10, 11; WW) Editor’s Note: There are currently no Grado D headphines listed. K

Sennheiser HD650 and Sony MDR-7500 headphones. (Vol.21 No.10, WW)

COMCOMPLETE AUDIO SYSTEMS

Linn Knekt Kivior hard-disk multizone music system: custom pricing depending on configuration.

The Kivior comprises the Turntables hard-disk server and the Oaktal multichannel DAC. Like the Turntables, the Oaktal can be used in standalone fashion in a single system or in conjunction with the Linnk Kivior Turntables and Internet control center in a complete Linnk multizone music system. A slightly lighter-weighted, very taut and articulate and a sort of edge that was wide and deep. JA found. However, there were a couple of intimate niceties. "The only way I could make the Oaktal to recognize an S/PDIF input was to unplug the RJ-45 jack... I couldn't get it to lock on to a digital stream with a $69.60 simple cable. The Turntables can store an astounding 57 days, 7 hours of uncompressed CD-quality music. "In theory," noted JA, "it should be possible to port those files from my PC to the Turntables via its USB or Ethernet jack. Practice - at least for now - the only way to get anything was to use compressed WAV files on CD-48s, then rip them with the Turntables, subjecting them to a second round of MP3 encoding... and potentially further degrading the sound quality." Nevertheless, as part of the Knekt system, he found that the Turntables offered both "access and quality." (Vol.24 No.12 WW)

A

Fanfare FT-1A: $1595
The FT-1A improves on the earlier FT-1 in its ability to scan both up and down the FM dial in stereo mode by remote, and in its use of firmware that allows easy field upgrades. Like the previous model, the tuner is analogized with a digital frequency display and a choice of which to play. Lately, toward the end, that the FT-1A gave up none of the FT-1’s strengths, including excellent sensitivity, good quality, and thoroughly musical sound. (Vol.24 No.10

Magnun Dynahal MD 108: $5850 SS
"Our new guy is a sweet-tinted, relaxed, deeply mellowed, tuned for the" Marvelous DAS. Turner offers balanced music, the sound of which, he thought, "did justice to the finest FM stations. In a balanced mode, the audio quality had less refinement but was still very good." Still capable ranges are "adequate for all but the most demanding cases," although sensitivity in Stereo Narrowband position was lower than spec. Stereophile’s "Audio Analog of Source of 1993." (Vol.20 No.5)

D

Tivoli Audio Model One table radio: $999.99 SS
"The Tivoli Model One is a radio stripped to its essential: no tone, no station memory, no remote control, no volume controls," said ST. This design from the late Henry Kloss didn't like being played very loud, ST discovered, but was "plenty loud for a typical office, and, ultimately, road good enough for me." He heard "a richness, a warmth, a great depth, a good quality of tone that made for enjoyable listening. I was never discouraged by a 'hot hinting,' says JA, "but pleasantly so." (Vol.24 No.3

Tivoli Audio Model Two stereo table radio: $1359.99
Just like the Model One, but in "stereo-style," the Model Two has the same 3" speaker and the same versatiginalid, but adds a dedicated A/B switch. In AM reception, it is slightly better than the original's, though still not great. ST: "If you want the best AM radio possible, you should probably tone elsewhere." He sums up: "Non-"non-fingering — perhaps someone to bother to turn on the upper bass, a little more of the treble, and a little by note. Notes to neutrality, especially in what is basically a radio. The head of the Model Two for it is, and for not pretending to be what it isn't. (Vol.25 No.4)

Editor's Note: There are currently no Class B or CFM tuners listed.

FM ANTENNE

Linn Knekt Kivior hard-disk multizone music system: custom pricing depending on configuration.

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A

Rives Audio PARC analog parametric equalizer: $2800
Of this two-channel, three-band parametric equalizer with Parametric Adaptive Room Compensation (PARC), KR said: "the PARC was completely transparent in both the critical mid-range and treble range, and in the lower midrange and bass. The PARC was changing the sound, as intended. Deep null voices were always firmest, better defined harmonically and spaced, and easier to distinguish musically." Large and complex passages of music were also improved. I realized that, although there was no loss of energy there was a greatly enhanced facility to hear more of what was going on within the orchestra. Pulls (Pans) of the low frequencies and Tins were unpredictable, while PARC does provide nice balance between the musical and the music. Stereophile's "Joint Acoustics of the Year." (Vol.26 No.7 WWW)

TacT Audio RCS 2.05 Digital Preamplifier: $1990
The DSP-based TacT measures how the speaker system and room together reproduce test signals, determines the differences in the frequency and time domains between the original test signals and the measured ones, and develops the required correction KL. It has also been able to control gain for (or, possibly, de-attenuation), signal polarity (for each channel individually), and to select among its digital and analog inputs. It can, with this, its tiny, lightweight remote control function, as the preamp/control center for a full system. If you need a bass, you need a DAC to control the laptop or PC; out of which the TacT software is installed, though this is "not needed for daily operation," assured KR. He wasn't very happy with the setup information provided, and the Help file didn't give much. Another big issue for KR: "The TacT system provides too useful verification or assessment of the success of the corrected system response. There is a facility for comparing the correction filter with the original measurements on screen, but no way of recentering the supposedly corrected system on screen. Nonetheless, the flexibility of the ICS system permits adequate response. Infact, the model, was, "comprehensive, but important." For the viewer with the TacT Audio ICS 2.05, more was "I would say that brought us to the edge of the sound, significantly closer to the ideal correction should be a mandatory part of any serious audio configuration." (Vol.24 No.9 WWW)

Z-Systems idp-1 reference: $5000
A traditional phono, but, as KR points out, "a flexible and friendly parametric equalizer" as well. "The best way to correct tonal imbalance in speakers and source material. The tone control for the digital age." However, he cautioned, it is "not a universal Band-Aid." While the idp-1 can usually the amplitude response of a speaker, it cannot correct phase problems as well; conversely, it can change the radiation pattern of a speaker. "And it's very easily a tool," added JA. After making his 1998 "Editor's Choice," JA bought one of the review samples and uses it to apply judiciously EQ in his real-life room, and agree to the "misapplication, but it is a true budget.

(Discs 23. No.2, WW)

MISCELLANEOUS ACCESSORIES

Audio Research Tube Damping Rings: $3.95 each
Damping rings for all AR products are now available to the public at large. They're made of a proprietary poly-
mer material that corrects kinetic energy to heat, and their improvement are unalike, exclusive: B8J: tighter, cleaner, deeper, more dynamic. More like true, more coherent, more fleshy, more relaxed. "It is an excellent addition to any audio system," says JA. "It is a great addition to any audio system," he added. (Vol.21 No.6 WW)

Audiolithica Cable Cooker v.2.5: $549
Holds in virtually any cord of cable there is in order to "enrich and warm up" its sound. MF found the Cable Cooker to alleviate cables' objectionable construction and brittleness. He said, "I don't know how many audio cabled would be willing to drop $699 for an 'improvement,' but my audio club would consider it for a review, the Cable Cooker is essential." (Vol.24 No.12)

AudioPrism Noise Sniffer RPI/EMI detector: $1995 SS
An acoustic detective in the campaign to eliminate noise," said Cliff Willis. Simply plug it in and run up the volume—its small build-in loudspeaker will reveal where your problem occurs near. Then you can turn to AudioPrism's QuietLine Parallel AG C line filter for a cure. "A must-have product, period," said JA. "A must-have product, period," added JA. (Vol.24 No.12)

AudioQuest binding post: $10.00 SS
A great idea improved — similar to the original Postman,
R E C O M M E N D E D  C O M P O N E N T S

Stereophile, Sept. 1997

MONITORING, Speakers, Cables, and Connectors

Stereophile, Sept. 1997

Power-Line Accessories

Acoustic Zen Gargantua II AC cable: $1488/6ft

"Optimized for low resistance and loop induc-
tance/RF in a big, soft muffa that is a complete pig to mount into tape
tape... The Gargantua let the Lamas MT1 and
halo dm8/30 power amplifiers show their
dynamic response against a background of
inter-minimal, quiet while allowing the distinctive sonic character of each
amp to speak clearly... The Gargantua is not
cheap, but its performance put it into the company of the best power
cables on the market. This was a $1600/48" extra-
less $800/4 for shorter cable. (Vol. 26 No. 1 W/W)

Audience power cord: $379/6ft

"The wonderfully flexible Audience, too, was a
winningly significant cleaning up the sound by lowering the
note, but was the best rope in the space between interminous, and
significantly improving the signal output at all levels and inner detail." Though Rf's reference, Synergistic
Research's AC Master Coupler, offered better scores of space and ambience, the Audience was very nearly
as good and much easier to use. (Vol. 25 No. 8 W/W)

Audio Power Industries Power Wedge Ultra 116
power conditioner: $1589

With a 12,000-mA AC fusing, AC Line conditioner as a "well-
built, intelligently thought-out solution to the problems of
power-line-borne noise and the vagaries of ground
loop, "Though he cautioned that one shouldn't look for
any line filter to compensate for a biggoting component,
if your system is refined enough, the 116 can take it to an
evermore refined level. A great addition to my home theater system
recommendation. (Vol. 22 No. 4 W/W)

AudioPrism LF-1 Mk.II Parallel Line AC filter: $224.95/8

An important step in the war against noise. According to
BW, these devices plug into the AC outlet, complete
the loops on the transformer, WP uses them on his
power amp, but cautions that using too many to a sys-
tem will close it down and make it sound dull. (Vol. 19 No. 3 & 4; see also "Industry Update" in Vol. 21 No. 4)

Source Alignment Systems by Checkpoint

P770 laser alignment system: $280

"The ideal device for positioning speakers," Rf said ener-
gistically, agreeing with Lit that it should be "in the
foot rest of every audiophile who wants to get the best sound
from loudspeakers. It's easy to use — just turn it on, hold it
to the floor front, then the adjusting speaker's position until the
"apparent source" is in line with the floor. The benefit of this technique
orientation are obtained — and is much more effective than
equally adjusting the speaker from the listening position."
(Vol. 21 No. 6 & 8, Vol. 21 No. 8)

Stabil122 contact enhancer: $28.95 5ml bottle

Used to increase the effectiveness of AC filters available from
complex black polymer liquid that, under the influence of
electricity, becomes conductive. Furthermore, it does not
wet the filter to form sludge. Perfect" lit: (Vol. 25 No. 12 W/W)

Thor Audio The Phono-Burn: $350

An MF face. "Burns in phono stage and entire systems for those who can't wait, and especially for reviewers of
gear. Just plug it into a CD player and your phono section, set the player on repeat for either the MM or
MCCD track, and let it cycle for a day or so. Then the
phono section is connected to your system, it can also "burn"
your entire system, MF pointed out. "No phono device should
be without one." (Vol. 21 No. 10)

WGT 3D Biwire kit: $199.80/4 or $22.40 each

The best, although the original catalogue
cold fusion, was replaced by gave, rise to ones. WGT014 RCA plugs cost $80/4. Distributed in the US by Kirshen Kable.
Both now include a complete set of strain-relief ferrules as a
length of WGT 4# silver solder, hence the price
increase. (NIR, but see "Industry Update." Vol. 22 No. 93)

K Jensen isolation in-line transformers.

P O W E R - L I N E  A C C E S S O R I E S

Acoustic Zen Gargantua II AC cable: $1488/6ft

"Optimized for low resistance and loop induc-
tance/RF in a big, soft muffa that is a complete pig to mount into tape
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significantly improving the signal output at all levels and inner detail." Though Rf's reference, Synergistic
Research's AC Master Coupler, offered better scores

Stereofile, April 2004

WorldRadioHistory.com
The Audio Outlet is proud to present conrad-johnson's newest flagship preamplifier, the ACT2. The ACT2 advances the composite triode technology so effectively pioneered in their ART preamplifier. Please call to arrange for an opportunity to hear for yourself the extraordinary musical performance of this latest conrad-johnson preamplifier.
with a "marked increase in perceived silence" when placed under equipment. He also noted that low-level musical information and detail were enhanced, especially in music, in his syner - J-10: "Transparency was greatly enhanced, coupled to a greater sense of air and original accuracy." WP maintains that when "he wants to really hear what a component is doing—as free as possible from the effects of his environment—...it turns on The Shield." (Vol.19 No.2, Vol.21 No.6)

Boltz CD 600 storage rack: $269; expansion kits, $159

Boltz LP shelves: $529 for a three-shelf unit; each additional shelf, $159.

Sitting on the Net (the boltz-usa.com), MF found these do-it-yourself racks: each is 48" high, 24" wide, just 6" deep, and holds 600 CDs! You can double or triple the capacity with the expansion kits, and the racks are now available pre-assembled. Now available as equipment racks, TV stands, and LP shelves. MF bought the LP rack, which consists of a heavy base and three shelves; additional shelves (3" wide by 10" deep) run $149 each, and you can stack 'em to the ceiling! "Really well-made and incredibly sturdy," reported The Analog One. Free shipping. (Vol.29 No.11, Vol.24 No.1)

Bright Star Air Mass 3: $129

Ilegious, inexpensive, and effective air-blaster product that drains our floor and airborne vibrations, MF said, WP agrees. Originally called Air Mass 1 (Vol.20 No.2)

Bright Star Gibralter 1 equipment stand: $189

Bright Star Audio Big Rock 1: $199

Bright Star Audio Little Rock 1 isolation pad: $165

Bright Star Mini-Rock F VP1 isolation base: $144

A very effective isolation system for control of unwanted vibrational energy. Individual components float on a sand bed for energy dissipation, and are weighted down with the Little Rock to minimize stubborn vibrations. The payoff is in enhanced imaging, separation, and a solid plate. "He is convinced that this system consistently tightens the bass, increases stereo transparency, and smooths the tweeter and treble. The Little Rock TTB Big Rock is a $275 sand table specially sized to support the TTB. WP: M.J. BD; and IJ all use one under their VPIs, as they provide a stable surface and offset such sonic deficiencies as a factory noise floor and increased bass. The Mini-Rock F 1 is sized for use under the TTB's 3" wheels. (Vol.20 No.5, Vol.28 No.11, Bright Mini-Rock F; Vol.20 No.4, TTB Big Rock.)

BrightStar Racks of Gibraltar 2 equipment stand: $245

Rigid, super-stable platform for audio equipment, and the "caravan" for the Ultimate isolation System: air-base (Air Mass) and sand-filled damping platform (Big Rock) makes "a sandwich," says the GPW. "With two wide, three high, widely spaced legs, this unit is king for MoA and boasts no noise lights, but "in its simplicity and quality it's attractive, even elegant," said HD. He recalled Louis Heinlin Schiбerman, who immortalized the phrase "form follows function." Suitable for turntables, superbly built, and the best BD has ever used. (Vol.23 No.5)

Bright Star Ultimate TNT Isolation System: $1060

Simple, affordable, effective isolation system for the VP1 TNT that contains a static pneumatic suspension mount with many advantages over "old-fashioned" models: that "high frequencies sound lessularesstereolessened—harmful images of figures and floated independent of the fundamental...has sounded more clear and tight, especially sustained notes or anything in the bottom two octaves of the piano." BD agrees, finding the ultimate isolation System lowers the TTB's (already low) background noise, resulting in subtle but noticeable improvements in image dimensionality, ambience, and inner detail. (Vol.20 No.7)

Golden Sound DH Cones, Squares, and Pads with the Cones alone: $100 "noted a lift in overall transparency, with no loss of any kind. Using the Squares alone, "the sound was softer than the Cone/Square combo...but nevertheless got high marks for a sweet and pleasant presentation." In combination? "The high and upper midrange were beautiful and open, the midrange had just the right amount of juice. The lower mids were full and all, but the basic extension was excellent." ST is also a fan, particularly of the BD pads, which "provided an improvement in sound around the very low and midrange region as well." (Vol.12 No.10, Vol.12 No.4)

Grand Prix Audio Monaco equipment stands: $274-$4850

Despite their stylish, lightweight design, a four-shelf Monaco stand can carry up to 50 lbs per shelf, for a maximum total load of 200 lbs. P.M. "More than anything else, the Monaco brought a sense of focus and a difficult-to-describe sense of calm to the whole of everything placed on it. Loading shelves and metal columns with lead shot produced another increment of improvement: "Backgrounds became quieter—low end detail retrieval improved markedly, and dynamic contrasts took on greater subtlety and sharper contrasts." Using separate isolation footers on components only "complicated things providing more Monkey-business out of the GPs’ approach to vibration control." The amp stand is expensive but "works as promised and looks cool too," decided MF. 3: A shelf system costs $270; 4 shelf system, $3795; 5 shelf system, $4850, base module, $425; tower modules, $100; Monacore Module, $175. Formula Shield Carbon-fiber/Kevlar composite shelf, $850. (Vol.24 No.7, amp stand: Vol.25 No.12 WW/WS)

Lovan Classic II Modular Racks: $849-$3782 based on shelf size and board color

Available similarly adaptable, and absolutely rigid rack design consisting of spliced three- or five-footed modules designed for stability and for stacking in combinations of high- and low-height modules. Supporting columns can be added for additional stability. RIV's double-walled AVR racks are perfect for larger, heavier power amplifiers. (Vol.22 No.6) PolyCrystall equipment racks: $499.95-$899.95, depending on size and number of shelves

The referent standard for rackage, the Scoll, reports J-10. The stands are easy to set up, rigid, well-braced, and very attractive, and serve as "delivery systems" for PolyCrystall shielding. They're made of a structurally consistent of diverse components ground down to a crystalline state and suspended in a hardened polymer. Especially in conjunction with Crystal cones and footers, J-10 says, the racks "made higher revelations in overall dimension and freedom from the music's natures of everyday resonances." He advises checking their tightness a few days after, that they should stay tight as a drum. (Vol.23 No.11)

PolyCrystal-coated Brass Spikes: $499.95/4 (1.5 lb) $799.95/4 (1.75 lb)

Tall and slim, the Spikes are made of brass encased in PolyCrystal and have 1/2-1 threaded shanks, which allow them to be substituted for the steel Stock spikes used on electronic components or speakers. J-10 found them effective, "calling the spikes' presence 'beautifully open, clear, and lovely'—if "a touch data-sounding" than some others. (Vol.21 No.4)

Salmiander Designs Archetype system equipment racks: $1095-$4999.95, depending on size and design

Remarkably versatile in their design, used with equipment and accessory racks that had WP reconfiguring like crazy. Extremely handsome wood finishes make these easy to integrate
Acoustic Zen Silver Reference II: $941 in RCA; $998 in XLR

The top of Acoustic Zen’s line and made of seven-nines silver, the SR II offered, according to PFA, a near-ideal balance of superb low-level resolution, harmonic richness, spatial purity, and imaging. “High-frequency detail is revealed in the midrange open, silky, and richly detailed.” The interconnects worked equally well with tube and solid-state components, he found, concluding “I would not have been surprised had their price been twice as high.” However, “not the best choice for a system that already skimps on brightness or for a more traditional setting. Overall, this is a very nice offering.”

Editor’s Note: Rather than place cables in the usual “bargain” and “expensive” categories, we’ve grouped the models that represent the magazine’s reviews into those either chosen to use on a long-term basis or have found to offer good value for money. They are therefore implicitly recommended.

Acoustic Zen Silver Reference II shares many features with the recently released, more expensive flagship model. It has a similar footprint and overall size, is designed to be compatible with the company’s other products, and is priced accordingly.
and rifle, no loose ends, and was free of glare, grain, or other annoying artifacts. The face attacks of voice talent and cymbals were handled with impressive clarity and ease. The bass was very tight, extended, well-controlled, and correctly sized. The Nordost Anvils 24: $417/1 pair, balanced, $776/1 additional meter, $410/1 additional meter

* The Anvils 24 had a neutral, relaxed sound," said BD. "With good air and space, the music was open, with a wide, deep soundstage. However, they did not reach the depths of total colors and the extreme inner detail of the expensive Nordost Valallia. Nor could it match the Nirvana’s X-Lufa’s incredibly natural soundstage reproduction. Nevertheless, the Anvils 24 were no slouches, just a bit off the standard set by the better-priced Valallia. [Vol.25 No.8 WW]

AudioQuest Cheethaw: $900/1 pair

* Features an onboard, battery-powered Delecieken-Has System that pulls all of the cable’s dielectric into a relatively high-voltage (24V) DC electrical field. The Cheethaw added bass control and greater HF extensions to the MP’s Musical Fidelity W4-1.5m cable, [Vol.27 No.1 WW]

Cardas Golden Reference: $917/1 pair

* "Low-energy-storage" balanced or unbalanced cables with three types and layers of shielding, thin-wall tubing, and no microphonics. "The Cheethaw was quite a bit more revealing of the bottom of the soundscape — the returns are copper. ST reported gains in clarity and quickness. "The sound is clearer, quicker, less confused. I suggest you run with the Cheethaw." [SW]

* Adds that the Kirmber’s excellent resolution of detail and transients has to be balanced against the fact that it might add too much "zip" to already bright systems. [Vol.19 No.11]

MIT M1-350 Twin CV-Terminal Series $1495/1 pair

* [Review: Reference interconnects. "Transparence, dynamic, and impressively impressive performance at frequency extremes," said BD. (NI) Monster Cable Sigma Retro Gold: $5750/1.5ft pair; $1000/3ft pair; $1500/6ft pair

* Designed by Dennis Martin. The Sigma Retro Gold interconnect uses three different gauges of six-nines copper conductor combined with Money Sostex and Micro Fiber-thread. Total balance was very neutral, neither too warm nor too cool, and provided the correct mix of delicacy and body. Speed, clarity, air, and extension at the top end were stellar. Edge definition and detail were superb, creating a sharply focused and obvious sense of picture. The reproduction of dynamic transients and the re-creation of images and soundstages were excellent. While image dimensionality and soundstage depth were good, the Monsters couldn’t quite match the Nirvana XLX or Anvils 24 in these areas. [NI]: "The Monsters should sound great in any system." [SW] Kit with speaker cables and interconnects costs $4500. [Vol.27 No.2 WW]

Nordost Valallia: $3300/1 pair, with RCA termination; balanced (XLR) configuration; $60 extra; additional length, $1000/pair (Although these cables are "inexpensive," HD stated that you’ll know what you’re doing for your system. Images were detailed, direct, and densely filled-in and three-dimensional. The soundstage moved farther than BD had ever experienced. However, while it was obviously the Valallia’s special, it was also obvious that they had a distinct tonal signature. HD wrote, "The system always had a lighter, dryer sound with the Nordost — the total balance was shifted slightly upward, and the overall presentation was more resonant."

* "Expensive, but boy, are they good!" [Vol. 24 No.11]

Silverline Technology VIP-24. $450/1 pair

* Balanced interconnects featuring solid, silver-plated 6N copper and round conductors. LG reported that they reduced system's intermod problems and were "highly recommended" (NR)

Stereofox SE-600: $2500/1 pair

* Designed by digital cable guru, Chris Sm_HP. The very expensive SE-600 is terminated with the elegantly chunky, serially engraved, 1/4" RCA connectors. [SW]: "Every technical aspect of this cable is distinctive, from the elliptical solid-core multi-strand geometry through insulators, shields, terminations, and the outer covering, a nostalgic brand of black fabric. Stereoxio cables avoid the sense of sonic unity of most cables. They offer an extraordinary sense of focus and detail. Indeed, there seem to be no tradeoffs in midrange liquidity and richness."

[Vol.25 No.12 WW]

Synergistic Research Alpine Starburst: £299/1 pair, with Active Shielding interconnects

* With the Alpine Starburst’s Active Shielding engaged, CS became suddenly aware of "a wealth of spatial cues — shaping information in sounddatelayer. The heightened sense of dimensionality was instantiating." And with the Mini Power Coupler, CS found the soundstage to extend beyond the rear wall, "conveying greater depth and dimension.

[Vol.24 No.2 WW]

Acoustic Zen Satori SignalR $1188/8ft pair

The all-copper Satori SignalR has a total gauge, 7 AWG. PH: "If the [Acoustic Zen Silver Reference II] represented a stunning bargain, the Satori SignalR took the concept of value into another universe... Deep, warm, articulate bass. Check. A harmonically rich, well-rounded midrange. Check. Double check. Smoothness, purity, and world-class detail on top. Check. At times there seemed as if there was just a dash of vibrato mellowness on top, but the Satori Satori never seemed to impede the retrieval of low-level detail even in trying. Thistle, black, spheres, marbled drums, or the drums of cosmic visions."

* Longer lengths cost $1000/extra, less $50 for shorter lengths. [Vol.26 No.1 WW]

Alpha-Core Python M12: $2878/8ft biewire pair (1)"

* "Of all the Alpha-Cores, the Python M 12 speaker cable showed no sign of being a budget-minded solution. [SW]: "Stereoxio cables avoided the sense of sonic unity of most cables. They offer an extraordinary sense of focus and detail. Indeed, there seem to be no tradeoffs in midrange liquidity and richness."

[Vol.25 No.12 WW]

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[Vol.25 No.12 WW]

Analysis Plus Oval 9: $3478/8 ft pair

* Follow oval cable designed "by physicists and engineers"...
who helped NASA, Motorola, Mitelab, and others, claims the documentation, which also states that all members of the design team "held advanced degrees in electrical engineering and physics, and broaching the set in the "area of computer simulation." The best relatively inex- penseiver speaker cable. Milly has heard. "You won't be disappointed," he sums up. (Vol.24 No.4; see also MF's comments on the Op/8 in Vol.26 No.4) Analysis of Pico Silver Crystal Oval 8: $870/8ft set See "Interconnects" (Vol.26 No.4) Audience AU24: $1115/3m pair, single wire, $300/additional meter; $2430/3m pair, biwire, $700/additional meter "If demonstrated most exciting the AU24 really shows: IH actually preferred the AU24 to his reference: Valhalla in terms of tonal balance, imaging, resolution of inner detail, and soundstaging. (Vol.25 No.8 W.W.W) AudioQuest CV:4: $40/ft, terminated; $320/10ft pair A rather stiff but basically neutral-sounding solid-core cable that JA recommends highly. Can be a little bright with the young speakers. (NR) AudioQuest Everest: $9000/6ft pair; $12000/8ft pair These physically heavy speaker cables are at the top of AudioQuest's speaker line. Simply put, J-10's crazy about them. They are all linear, with powerful bass, and in a harmony and harmonically achieve our natural, and beautifully sweet highs, he says. "Some people might worry that they'd be too warm with all the bass. It's hard to do better, he sighs. (NR) AudioQuest Gibraltar: $950/10ft pair, single biwire configuration, spade-lug or banana-plug termination* Each half-wire twin leads the local wave of flow solid ultra-pure copper conductors with one set for bass signals, the other for treble, while the overall twin leads layout keeps the two sets magnetically separated in a tone like this design. B3 found that the flexible Gibraltar was "easy to run and accommodates the inherent" when combined with the speakers. The Gibraltar gave the mids good with the clarity and muscle, and even by swaying slightly at times. Tonally, the AQ were slightly to the warm side of neutral and a bit brighter on the bottom than my other cables. Their soundstage was a little narrower. The first speaker I used for this pair, dimensional. (Vol.24 No.1) Pure Silver Connection (PSC) K50: $1250/15m pair Features biasing via silver-plated, solid-copper spades in tassels with gold-plated banana-plugs. Optimizes speaker response in LG's system. They are solid, adding ribbons, insulating "Cortano" ribs for the highs and B30 rib- lions for the lows. Again, highly recommended! (NR) RadioShack 18-gauge solid-core hookup wire: $3.99/10ft spool sold $500/10ft spool is Ridiculously cheap way of connecting speakers. yes. ST reports that this cable is okay occasionally. You have to choose for yourself whether to use or even a pair for best sound. (Vol.24 No.1) It all depends on the cables you have. (NR) StereoVox LSP-60: $6950/2.5m pair Terminated with proprietary angled silver spades. See "Interconnects" (Vol.25 No.2 W.W.W) Straight Wire Master II: $60/10ft pair, $60/additional ft It clean and light with the least residual brightness after burn-in, notes KE. In the 6th lengths they use, they're extremely revealing of amp and speaker finishes. (NR) Synergistic Research Absolute Reference Speaker Wire X2: $6800/10ft pair, with Mini-Power Coupler * B3 finds these speaker cables, like the Designs' Refer- ence interconnects, to be essentially neutral. The Vortex is a little up front and over on the system's sound that if they'd likely seem unimpressive on first listen, he warns. CS agrees, adding that he was "impressed with the way they just got out of the way and let you listen in on the music... they [show] a good image with a lot of air in it, natural highs, smooth midrange, and nice, tight, uncol- orded bass." J-10 comments: "one of only a handful at the very top of the cable hill." (Vol.21 No.3, Vol.24 No.4) K Wireworld Gold Eclipse HII+, Silensmith Audio speaker cables Delotions+ Wireworld Equinox 1+ replaced by Equinox 5 not yet auditioned; Harmonic Wire Technology Pro- 9 Plus, Nirvna S-5 Series, Stereophile SR-O not auditioned in a long time.
Loudspeaker design is an art and a science. Anyone who tells you it’s only one or the other is probably building or listening to some awful-sounding speakers. Design a speaker in an anechoic chamber for the “theoretical” world, and there’s no guarantee it will sound good in the real one. Even building a speaker that excels at “real-room” measurements doesn’t guarantee that it will sound all that convincing when reproducing music. We can’t measure everything, and what we can measure can’t be reliably ranked in terms of what’s important to most listeners.

Do we really want to listen to “accurate” loudspeakers if the vast majority of recordings were mixed and mastered on “inaccurate” ones? Most microphones have more peaks than the Rocky Mountains. Do we really want to hear recordings made using such mikes reproduced “accurately”?

How’s the response in your room? Flat? Probably not. Most rooms have bumps and suckouts that can turn the most “accurate” loudspeaker into a lumpy mattress of sound.

Looking at the range of measurements made by John Atkinson in the aftermath of any “observational” Stereophile loudspeaker review, there will hopefully be some correlation between what was heard and what was measured. But in the end, a reviewer’s—and a consumer’s—subjective reaction will be based on a complex set of factors that includes the room, the setup, musical taste, and which performance factors loom largest on his or her listening horizon.

Often, the ear can be fooled into hearing a rise in one area when in fact there’s a dip somewhere else. In the end, does it matter which it is when, ultimately, one’s reaction to a design is based on a complex mix of ingredients and proportions that’s often impossible to sort out?

Designing purely by subjective “taste” can sometimes yield surprisingly good results, but I wouldn’t bet on such a designer establishing an enviable track record. Every speaker design—even the best and most expensive—is an assemblage of compromises based on what’s known and what’s not, what’s possible and what’s not, what technologies are available, and, in the end, the personal tastes and philosophies of the designer.

That this is an inexact science married to an inelegant art form is proven at every Consumer Electronics Show. I spent a whirlwind day in Las Vegas this year traveling from room to room with record producer Rick Rubin and Stereophile’s Rick Rosen, and although all of the rooms we liked sounded very different from one another, and we didn’t always agree on whether we liked what we heard enough to want to own it, there were mostly unanimous thumbs up or down almost every time.

One of the rooms we visited was the Aerial Acoustics—Musical Fidelity suite, atop the Mirage Hotel. The heart of the system was what I’d just been listening to at home: Aerial’s Model 20Ts driven by a Musical Fidelity kWP preamp and kW monoblocks. Different room, different results, but close enough to sound familiar, most of the difference being in the bass. The big Mirage room proved to be an ideal venue for the 20Ts, my room somewhat less so; but I know my room well, so I wasn’t at all surprised by what I heard that day.

**Heavy lifting**

With 12 years’ experience at a/d/s designing individual drivers and complete loudspeakers before starting his own company, Aerial’s Michael Kelly is an industry veteran. When he left a/d/s in 1986 to go back to college, Kelly was the firm’s executive vice president in charge of research and development. In 1991, armed with an MBA, he founded Aerial Acoustics and introduced his Model 10T. While not the most original-looking speaker—it was clearly modeled after KEF’s ground-breaking 105 and B&W’s 801—the 10T offered outstanding full-range performance, measured and otherwise, at a relatively low price of $7000/pair.

The 10Ti was big and weighed 110 lbs because Kelly felt that there was no substitute for a well-braced, resonance-free bass cabinet whose output could extend down to 20Hz, -6dB. He still feels that way: the new Model 20T weighs 270 lbs, which includes an 80-lb head unit, a 170-lb bass cabinet, and a 20-lb adjustable base of laser-cut steel with outboard spikes. The 20T is larger but far better proportioned than was the 10T, and actually looks smaller, so is therefore more attractive and far easier to integrate into a living room.

Clearly, the 20T’s takeoff point was Wilson Audio Specialties’ highly suc-

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**Description:** Three-way, reflex-loaded, floorstanding loudspeaker. Drive-units: 4.1" aluminum ribbon tweeter, 7.1" bilaminate-cone midrange, two 9" bilaminate-cone woofers. Frequency range: 28Hz–30kHz, ±2dB (8dB at 40kHz). Impedance: 4 ohms nominal, 2.8 ohms minimum. Sensitivity: 90dB/W/m.

**Dimensions:** Overall: 45.7" H by 12.6" W by 22" D. (Head cabin: 15.4" H by 10.7" W by 22" D. Bass cabinet: 30.2" H by 12.6" W by 22" D.) Adjustable base adds 1" to total height. Weight: 270 lbs (head cabinet, 80 lbs; bass cabinet, 170 lbs; base, 20 lbs).

**Finishes:** Black Ash, Natural Cherry, Santos Rosewood, Bird’s-Eye Maple, Black High Gloss, Silver High Gloss, Rose Walnut, and other finishes.

**Serial numbers of units reviewed:** 200061 & 62.

**Price:** $23,500/pair–$28,000/pair, depending on finish. Approximate number of dealers: 65. Warranty: 3 years parts & labor, transferable.

**Manufacturer:** Aerial Acoustics Corp., P.O. Box 81248, Wellesley Hills, MA 02481. Tel./Fax: (781) 235-7715. Web: www.aerialacoustics.com.

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Aerial Model 20T loudspeaker
ccessful WATT/Puppy series: small speakers that can deliver big sound. (After my review of the WATT/Puppy 7 was published in the September 2003 Stereophile, a representative from the resurrected Fried Products pointed out to me that Bud Fried had built a WATT-shaped midrange-tweeter head array long before Wilson—or anyone else, for that matter.)

The 20T's upper and lower cabinets are built to Aerial's specifications by the Hornslag Cabinet factory in Denmark, which also builds enclosures to spec for Audio Physic, Linn, DALI, Naim, and many other well-known loudspeaker companies. Using its patented Hornflex technology, Hornslag can build ultra-complex cabinets, including ones with curvaceous surfaces. While the Hornflex wasn't used to build the 20T, during a visit I paid to the factory last fall I was shown the geometrically complex CAD drawing of the 20T that Aerial had given Hornslag, their job to turn it into a manufacturable product. The drawing was impressive; the 20T looked impossibly complex and fanatically well-braced.

The bass cabinet's two-in-one construction consists of inner and outer enclosures of 1\'\'-thick MDF with a constrained damping layer in between. Extensive three-dimensional bracing permeates the cabinet interior, the braces penetrating the damping material and causing the inner enclosure to push against the outer one. The bass cabinet, measuring 30\'\' H by 13\'\' W by 22\'\' D, weighs 170 lbs and is claimed to be extremely rigid, stably braced, effectively damped. Rap it with your knuckles and you'll come away bruised. While I wouldn't expect the kind of virtually resonant-free cabinet measurement Rockport Technologies' Antares delivered—see my review in August 2002—I imagine something pretty close.

The upper, 80-lb cabinet is built using the same complex construction, but has a 2\'\'-thick wall of MDF behind the midrange driver that creates an isolated, double-vented rear chamber containing the mid/Hi crossover network. Both cabinets are complex geometric shapes, but unless they're brought to your attention, you might not appreciate the difficulties involved in their construction—especially the intersection of a complex seam in the bass cabinet's sidewalls. Also note how the mirror-imaged woofer modules line up properly at the seams on the front baffle, and in their flow from head unit to bass cabinet. If you can inspect a 20T in person, a close look at such intricacies can be fascinating.

The head unit sits on four downward-facing points that fit into lower-cabinet recesses fitted with metal inserts, which Aerial claims prevent en-

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**Measurements**

The Aerial Model 20T is around 3dB more sensitive than the norm, at an estimated 89.5dB/2.83V/m. (The difference between this figure and the specified 90dB is within the margin of error for this measurement.) The speaker still needs to be used with an amplifier capable of good current delivery, however, as its impedance magnitude stays below 6 ohms through the midrange to the midbass, and drops to minimum values of 3.35 ohms at 22Hz and 65Hz and 2.9 ohms at 236Hz (fig.1). There is also an amplifier-punishing combination of 4.4 ohms and a ~48° electrical phase angle at 175Hz, but, pipe-organ recordings aside, music has little energy in this region. This graph was plotted with both woofers

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**Fig.1** Aerial 20T, electrical impedance (solid) and phase (dashed) with switches set to their righthand positions. (2 ohms/vertical div.)

**Fig.2** Aerial 20T, cumulative spectral-decay plot calculated from the output of an accelerometer fastened to the woofer cabinet's side panel. (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz before crossover.)

**Fig.3** Aerial 20T, cumulative spectral-decay plot calculated from the output of an accelerometer fastened to the midrange-treble cabinet's side panel. (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz.)
Aerial's full-range, sculpted speaker drivers are elegantly designed and visually dramatic. The Wilson WATT/Puppy, Aerial's Model 20T aims to deliver big-speaker performance from a relatively small package.

**Driver-driven**

Michael Kelly is a driver man. During his time at 2/3/4 developing drive-units, he established invaluable connections with most of the world's high-quality suppliers, and he's used them in the design and construction of the drivers used in the entire Aerial line. All of the 20T's drivers are custom-made. The 9" woofers, optimized for the vented enclosure, have cast magnesium baskets made in Germany, German-made damped fiber bilaminate cones from Mueller, and long, copper-aluminum voice-coils wound on titanium bobbins. The low-Q, linear-excitation drivers are claimed to have a long "in-gap" coil movement. Aerial claims that the two 9" drivers, run in parallel, more air more effectively than a single 12" one.

Like the 10T's, the larger 20T's bass response is claimed to be flat to 28Hz, and to roll off smoothly from there. Kelly set the equivalent "Q" at a "slightly overdamped" 0.65. More damped and it would be too dry for his taste, less damped and he was afraid the bass wouldn't blend well with the fast, crisp-sounding ribbon tweeter. Still, he told me; the system's bass response runs "on the edge of warm" — a deliberate design choice, as was Kelly's decision to limit low-frequency extension. Should the buyer wish to extend response to the deepest frequencies, an optimally placed Aerial SW12 subwoofer could be added to create a quasi-four-way system.

The woofers cross over to a new 71" midrange driver that features a German-made carbon-pulp cone made of "randomized" 1" fibers that are stiff and lightweight. According to Kelly, this driver, which is assembled at the ScanSpeak factory in Denmark, was developed over two and a half years and required 28 prototypes to get right. It's "the star of the show," he tells me, because it was so difficult to get it to integrate seamlessly with the ribbon tweeter. It's clearly the driver of which he's most proud.

Every speaker design is a compromise, and in the 20T the biggest compromise is the midrange driver, which needed to be larger than would otherwise be considered optimal in order to keep the sensitivity high enough to ease integration with the tweeter. The integral phase plug is there to help control and HF switches set to their right-hand positions. With these set to the left-most positions, the midrange minimum moved down in frequency slightly, while the impedance above 5kHz rose by 2–3 ohms (not shown). (All other measurements were made with the two switches set to their central positions.) Note, by the way, the large difference between the average impedance in the midrange and that in the treble. With amplifiers having high source impedances — typical tube designs — the 20T's balance will tilt up in the highs.

The 20T's cabinets felt like stone to the knuckle-rap test. Examining the enclosure walls' vibrational behavior with a plastic-tape accelerometer revealed a very low level of flexure at 55Hz from the sides of the bass unit (fig.2), and a slightly higher level at 434Hz from the side of the midrange/HF head unit (fig.3). Neither will lead to audible coloration.

The saddle centered at 22Hz in fig.2's magnitude trace suggests the tuning frequency of the downward-firing port. (The 20T was raised on its spiked feet for all measurements, giving a clearance of about 1.5" between the port opening and the floor.) However, the woofers' minimum-motion point can be seen in fig.4 (blue trace) to lie slightly higher in frequency, at 25Hz. The port covers a broader bandpass than usual, and some higher-frequency activity is evident (red trace). However, this is very low in level and will be suppressed by the fact that the port opening is shielded from the listener by the body of the woofer enclosure. The output of the woofers rolls off above 260Hz with what appears to be a 24dB/octave slope, landing over to the midrange unit (green trace). However, the woofers extend just a little too high in frequency to give the smoothest integration with the midrange unit, which is seen by the slight bump between 200Hz and 300Hz in the summed response of the LF drive-units and the port (black trace).

This summed nearfield LF response is repeated in the left side of fig.5, spiked to the farfield response averaged across a 30° horizontal window on the ribbon axis. The low-frequency bump might look alarming, but it is to a large extent a byproduct of the nearfield measurement technique, which assumes a hemispherical acoustic environment for the drive-units. Even so, the smaller the room in which the Aerial 20Ts are used, the greater the possibility of a little too much midbass in absolute terms.

The midrange and treble response in fig.5 is superbly extended and flat, with the slightest hint of a laid-back presence region. However, as I always point out, a flat on-axis response cor-

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**Aerial Model 20T**

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Stereophile, April 2004
beaming at the midrange's highish upper-frequency limit of 3.5kHz. The midrange features an unusual one-piece, CNC-machined yoke system of high-quality steel produced for Aerial by Danish Sound, the parent company of Vifa and ScanSpeak. Kelly told me that while this assembly is expensive to make, it results in a rigid system that offers an extremely strong and uniform magnetic field. As in the woofer, the copper-clad aluminum voice-coil is wound on a Japanese-made titanium bobbin. In short, said Kelly, the midrange is a totally tweaked-out drive-unit capable of rapid acceleration and tight control, its performance based not on a single "silver bullet" but on the sum of all of its design elements.

The tweeter is a new, genuine ribbon design, not a "vibrating circuit board." That is, it's not one of those etched pieces of Mylar often incorrectly called a "ribbon," but a true ribbon—a single, light aluminum conductor with no backing material of any kind. Made by Raven, in California, the ribbon is redamped and built to Aerial's specs, which include a custom-foiled waveguide made for Aerial by a California company specializing in small-airplane parts, and a magnet structure consisting of three "domino-sized" blocks of neodymium supplied by a third California firm.

"We listened to everything, every ribbon I could get my hands on," Kelly told me, "before choosing this one to be the basis of our design." The tweeter, assembled by Raven from the supplied parts, weighs 5 lbs and costs "eight times" what a "very good" dome tweeter would, according to Kelly. He claims it features quick response time and smooth on-axis response flat to 30kHz, and down only 7dB at 40kHz. He also says the tweeter is down only a few dB at 20kHz when listened to 45° off-axis. And it can handle plenty of power.

"You can't burn it out," says Kelly. "So far, we've shipped more than 100 pairs, and there have been no tweeter failures." He did caution that a vacuum cleaner could easily suck the ribbon out of the gap. "It's replaceable in the field," he assured me.

Kelly's design partner on the 20T was Dave Marshall, who, Kelly said, came up with most of the critical crossover network, which uses French-made polypropylene film capacitors, large air-core (tweeter) and high-nickel-steel (woofer) coils, and multiple parallel resistors in a 24dB/octave design said to offer "seamless" phase and amplitude integration. All internal wiring is insulated with Teflon and soldered with silver.

**Heavy lifting, light tweaking**

Michael Kelly and Dave Marshall relates with a neutral perceived balance only if the speaker's dispersion—its off-axis behavior—is also even and well-controlled.

The 20T's horizontal dispersion is shown in fig.6. With the exception of a crossover-region suckout at extreme off-axis angles, the contour lines in the graph are uniformly spaced. This is excellent behavior, considering the disparate widths of the midrange and treble units, and contributes to the stable, well-defined stereo imaging I noted in my own auditioning of the 20Ts in Mikey's room.

However, that fairly long ribbon has very little vertical dispersion. As can be seen in fig.7, the plot of the 20T's vertical radiation pattern, the speaker's output falls off rapidly once the listener's ears move more than 5° above or below the center of the ribbon. And if you stand up, not only do the high frequencies disappear above 7kHz, as noted by MF in his auditioning, but a suckout develops at the upper crossover frequency. This behavior will not be an issue in rooms of normal size, as long as the listener sits at an appropriate height; but in very large rooms, the 20T's limited vertical dispersion in the top octave and a half will render its balance too mellow.

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arrived one Saturday late last fall to install the 20Ts—definitely a two-man job. The Aerials ended up very close to where the WATT/Puppy 7s and every other speaker I’ve reviewed have ended up in my room: a few feet from the front wall, somewhat farther from the side walls, about 10’ apart, and angled toward the listening position.

The bass unit has two sets of WBT five-way binding posts, normally linked with flat, gold-plated jumpers. Internal wiring links the upper binding posts to a third set mounted atop the bass unit and hidden when the head unit is put in place. Aerial supplies a short length of high-quality wire to link the upper posts to a fourth set on the head unit. I opted to hook up directly to the head unit’s binding posts, for the best connection to the midrange and tweeter, with the bass unit’s signal traveling down through the link. A three-position woofer control on the bass unit offers two levels of bass boost, centered between 40 and 50Hz, while one on the head unit can boost the tweeter output, depending on listening distance and taste. My preferences for both controls changed over the review period, mostly depending on associated equipment; to begin with, I left both at their flat “11 o’clock” settings.

My review of Theta Digital’s Enterprise power amplifier was in progress when the Aerials arrived, so I used them for my first listen to the Theta. With more than 400Wpc available from the Theta into 4 ohms, and the Aerials rated at 90dB efficiency at 4 ohms (and dipping down to 2.8 ohms), there was clearly enough power to drive the 20Ts, but that first listening session resulted in disappointing, somewhat anemic sound, as reported in the Enterprise review in March. Despite the promised low-frequency extension, the Aerials sounded cut off at the knees on Sundazed’s superb 180gm mono reissue of Bob Dylan’s John Wesley Harding, which was the last album I played through the WATT/Puppy 7s before I made the switch. And the WATT/Puppy’s themselves had been sounding somewhat lackluster in the bass compared to their performance driven by the Musical Fidelity kW monoblocks, which I eventually used to drive the Aerials.

I’ve reviewed several Aerial speakers over the years, and if they shared any negative characteristic, it would be a low-end “thickness” and too much bass, not too little. What’s more, the WATT/Puppy 7 doesn’t actually go that low, substituting a little 50–60Hz bump to give the pleasing illusion of deep bass. Yet at first, the Wilson sounded fuller in the bass than the 20T, which can go genuinely low.

I switched to the 100Wpc Music Reference RM-200 power amp, which had just been fitted with new KT88 output tubes. From a cold start, the system jelled nicely, the Aerials sounding sweet, open, extended, incredibly airy, and especially detailed on the Dylan LP and a few others we tried. But it would take more power and more current to coax the 20T completely out of its shell; after Kelly and Marshall headed back to Massachusetts that evening, I brought in

**Measurements**

Response of the 20T’s midrange-treble head unit (fig.8) indicates that both upper-frequency drive-units are connected with the same, positive acoustic polarity. Independent examination of the woofers step responses (not shown) confirms that they are also connected in positive polarity. While the 20T is not time-coherent—the output of the ribbon arrives at the microphone before that of the midrange unit—each unit’s step smoothly hands over to that of the next lower in frequency, confirming the excellent frequency-domain integration seen in fig.5.

Finally, the 20T’s cumulative spectral-decay plot (fig.9) is extremely clean throughout the region covered by the ribbon tweeter. (Ignore the dark ridge at 16.75kHz, which is due to interference from either my computer monitor or the closed-circuit TV camera-monitor combination I use to see the speaker while it is being measured.) The very slight amount of delayed energy evident at 3.5kHz might be due to the high-order crossover filter.

There is also a step at around 1.3kHz that just might—might—lead to a slight nasal coloration. But I noted no such coloration in my own auditioning, and neither did Mikey.

Summing up these measurements is simple: Aerial’s Model 20T is a superbly engineered speaker that amply fulfills the promise of its predecessors.

—John Atkinson
the forklift and reinstalled the huge, powerful Musical Fidelity kWs.

Driven by a moderately powerful tube amp or a transistorized monster, the 20T's ribbon tweeter let me know it was producing the high frequencies—and that's not a criticism. A ribbon sounds different from a moving-coil dome tweeter; without a doubt, it resolves much more information. There wasn't a familiar LP or CD in my collection that didn't surprise me with heretofore hidden details that were now suddenly, obviously there through the 20T. These were genuine, musically significant details, not peak-induced accentuations, because the 20T's tweeter was also one of the smoothest, sweetest, airiest high-frequency reproducers I've ever heard. I'm sure ribbon aficionados reading this are saying, "So what else is new?"

When I stood up, however, I didn't hear much of the ribbon at all. Severely restricted vertical dispersion is the downside of such a design, but when I sat within the prescribed vertical window, I could luxuriate in the sweetness of the sound. Not every ribbon yields such sweetness. At this year's CES I heard a ribbon design that was so infested with resonances and nonlinearities that a familiar Pentangle track (bell-toned guitars, wispy female vocal) was almost unrecognizable. Aerial's ribbon was sweet, controlled, and subjectively linear; I'm sure that JA's measurements will confirm the smoothness and extension of its response, both on and off its horizontal axis.

One criticism of ribbons and electrostatic designs is that their transparency lacks weight and solidity. That was not the case with the 20T's tweeter. On good recordings, female voices had an ethereal clarity and transparency, but they also had weight and solidity. Patricia Barber's Companion (SACD, Mobile Fidelity UDSACD 2023) sounded positively spooky, so transparent was the presentation—Barber's voice floated pristine in space, the sibilants resolving almost sweetly. Cymbals, which can sound more like hissing airbrakes when reproduced by ribbons, had plenty of brass, sizzle, and speed, but far less smear than from the best dome tweeters I've heard—including the titanium one Aerial uses in its other speakers.

Ironically, one of the most amazing demonstrations of this tweeter's resolving power was when I played a 180gm vinyl reissue of My Bloody Valentine's legendary and influential 1991 album, Loveless [Plain 105]. It's not for everyone, and it's definitely not an "audiophile" recording, but this collection of mesmerizing, shimmering, guitar-driven tape loops and vocal washes concentrates much of its considerable energy in this tweeter's sweet spot. What sounds like two-dimensional glaze on most other speakers sprang to plasmatic life through the 20T, its ribbon easily separating out multiple musical strands that occupy the same frequency range and easily delineating the undulating high-speed effects, rendering them as liquid wave upon wave washing up on a three-dimensional shoreline. Yikes! Hearing that hypnotic record through the 20Ts was a revelation.

But enough about the tweeter, even though it's what will first snare your attention. The key to the Aerial 20T's success is, as Michael Kelly claimed, that midrange driver and its seamless blend with the tweeter. It does keep up, and that's the key to the 20Ts sense of "body" on female voices, cymbals, strings, and percussion. I've not heard DCC Compact Classic's vinyl reissue of Nat Cole's Love Is The Thing (LPZ-2029), masterfully cut by Kevin Gray and Steve Hoffman, sound so splendid, tinirally or spatially. The strings can sound a bit boxy, but they were positively silky and mellow through the 20Ts, and Cole's voice had a rich, creamy, articulate blend, the microphone's obvious HF peak not spreading beyond its narrow boundaries.

The 20Ts performance on that record clinched for me the brilliance of this speaker's overall design and the effectiveness of its driver integration. Not only was the tonal balance nearly ideal, but the spatial delivery was positively dazzling: wall-to-wall, three-dimensional, properly proportioned, and, of course, transparent. The tweeter's smooth lateral dispersion and frequency extension helped produce the most effective disappearing act I've heard in my room. Soundstaging, imaging, and resolution fanatics will fall in love with this speaker—live recordings such as Tony Bennett at Carnegie Hall (LP, Columbia C25 823) or the Weavers' Reunion at Carnegie Hall 1963 (LP, Vanguard VSD 2150) sounded flat-out spectacular, and as vibrantly real as I've ever heard them. But remember: Many recordings are bright; through the 20T, a bright recording will sound bright.

What about dynamics and bass?
Dynamics? No problem. Aerial has always done a great job there, though the company's less efficient designs (usually 86dB), featuring low impedance (below 3 ohms in places) and sometimes relatively steep phase angles, require hefty amplifiers with lots of current drive, and don't really spring to life until they're played loud. Not so with the 20T, which is rated at 90dB efficiency and seemed to react well when driven by a 100Wpc tube amp. Driven by the powerful Musical Fidelity kW, the 20T's dynamic response at both ends of the scale was fast and flawless. Bring on the audiophile drum records—this speaker can put a real drum kit in your room as can only a few other speakers I've heard, all of them considerably larger.

While the 20T is supposed to be relatively flat to below 30Hz, and I could hear subjectively lower bass from it than from the WATT/Puppy 7, which doesn't really go all that low in my smallish room (15' by 20' by 8'), the 20T was not able to express itself fully. Nor was the Rockport

Associated Equipment

Analog source: Simon Yorkie S7, Clearaudio Emotion turntables; Immedia RPM-2, Graham 22 toncars; Lyra Titan, Graham Nightingale, Clearaudio Aurum Classic cartridges.


Preamplification: Musical Fidelity kW preamp, Manley Steelhead phono preamp.

Power amplifiers: Musical Fidelity kW & Theta Digital Enterprise monoblocks.

Loudspeakers: Wilson WATT/Puppy 7, Aerial Acoustics SW12 subwoofer.


— Michael Fremer
Antares, for that matter. Nor did my room’s 4–6dB suckout at 67Hz help; I suspect the 20T’s LF response will measure as flat down there as advertised. The result in my room was that the Aerials didn’t sound as forceful and extended on bottom as I know they can be. I know, because when I heard them in the bigger space at CES, their bottom end compressed chest and room and was impressively articulate. The result in my room was not the speaker’s fault, but if you’re considering using a pair of 20Ts in a room with dimensions similar to mine, you might be paying for bass performance you won’t be able to get.

That said, the bass delivered in my room by the 20Ts was very fast, clean, and articulate on the very bottom, with a slight warming trend in the mid bass—but that could have been the room again, or it could have been a purposeful decision on Kelly’s part to counter the tweeter’s extension and presence in the overall picture. Kelly did tell me he wanted the very bottom to be fast and well-damped, in order to keep up with the tweeter.

Put all the pieces together and what you have is a solid piece of speaker design and engineering that, in the right circumstances, will deliver a full, top-bottom musical experience in every parameter you can think of. The Aerial 20T easily passed the $20,000 test.

I enjoyed every minute I spent with the Aerial Model 20Ts, listening long into many nights.

Conclusion

The Aerial Model 20Ts were among the most convincing, tonally neutral speakers I’ve heard, revealing and unraveling heretofore hidden musical and/or spatial details in almost every recording I played through them. As with any of the truly great speakers out there, months of listening failed to reveal any of those annoying colorations that become impossible to ignore—though I’m sure there are some well-hidden ones, as there are in every good design.

That said, though the 20T was designed to be small and play big, I’d proceed with caution if your room is relatively small, as mine is. You might not get the bottom-end weight you want, and that the speaker is capable of delivering. That does diminish its sonic foundation somewhat and tip the balance toward the tweeter. Some listeners might wish the high end could be dropped down in relative level in such circumstances. Also, remember that there’s no hiding from bright recordings (though the tweeter’s lack of discernible peaks helps), and that, as with any speaker of limited vertical dispersion, music listened to while you’re not seated on the optimal axis will sound muffled and less than satisfying.

When I returned to my reference Wilson Audio WATT/Puppy 7s, I welcomed the Wilsons’ fullness and the ease of the overall listening experience, but I sorely missed the 20Ts’ transparency, clarity, and resolution on top. In the two months they spent in my system, I enjoyed every minute I spent with the Aerial Model 20Ts, listening long into many nights and leaving my listening room refreshed and renewed.

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Infinity Primus 150 loudspeaker

It was 20 years ago that I began audio reviewing as a second career. It was also 20 years ago that I made my first very expensive audio purchase: a pair of Infinity RS-1b speakers. The RS-1b was a landmark speaker in its day, and very costly for the time at $5500/pair. (I think my dentist has just spent more than that on a TV.) In retrospect, the RS-1b was an extraordinary value. With four large towers, more than 30 drivers, and a passive crossover and servo network, the Infinity RS-1b resolved a significant amount of detail, was capable of large dynamic swings, had pinpoint image specificity on a wide, deep soundstage, and was capable of reproducing a convincing bottom octave in the right room when paired with the right associated equipment. Its main weaknesses were a relative lack of coherence due to its use of three different types of drivers to cover the various frequency ranges, and both the midrange/tweeter towers and woofer columns were picky about amplifier matching.

The RS-1bs served me for 10 years as both analytical reviewing tools and party tools for enjoying a wide range of music with friends. In fact, a number of friends got hooked on the audio hobby after hearing my Infinity system. Furthermore, when used with modern electronics, the RS-1b still holds its own against current designs, and is a steal in today’s used market. (Replacement drivers are no longer available, however.) But I’ve never reviewed an Infinity speaker — their most interesting designs tended to be the more expensive ones, and my journalistic juices get bubbling on the opposite end of the price spectrum. That all changed in June 2003, when Infinity announced its entry-level Primus line.

The Primus Directive

Infinity’s Primus line comprises five stereo speakers, which range from the $178/pair Primus 140 bookshelf to the $658/pair Primus 360 floorstander. The line also includes a center-channel home theater speaker and three powered subwoofers. Although each Primus model is designed to be used for full-range music playback, any of the stereo speakers in the Primus line can be matched (seamlessly, according to Infinity) with any of their powered subwoofers when additional bass extension is desired for a two-channel or home theater application.

All Primus speakers share the same design philosophy, differing only in the number and size of their drivers. The series incorporates Infinity’s proprietary Metal Matrix Diaphragm (MMD) drivers. Infinity claims that this technique results in reduced distortion and cone breakup as well as improved transient response, resolution, and smoothness throughout each driver’s range.

Infinity felt very strongly that the Primus 150, one notch up from the bottom of the line, should be the model reviewed; the 150 will be heavily promoted through such mass-market chains as Circuit City and Crutchfield, as well as through audiophile dealers. Their goal is to get grandma feeling comfortable about getting a hi-fi for her assisted-living condo without feeling intimidated by a high-end hi-fi salon.

The front-ported, two-way Primus 150 features a 3½” tweeter and a 5¼” woofer. Its rigidly braced cabinet also incorporates keyhole mounts to facilitate wall-mounting. As usual, I tested the speakers using Celestion Si stands. Infinity claims a slight improvement in transparency when the speakers are used with their grilles off (I agree). The 150s, finished in black ash, are also rather attractive sans grilles — their baffles are finished in a silver trim that matches the color of the drive-units.


Price: $198/pair. Approximate number of dealers: 100.

Manufacturer: Infinity Systems, 250 Crossways Park Drive, Woodbury, NY 11797. Tel: (516) 674-4INF. Fax: (516) 682-3523. Web: www.infinitysystems.com.
To boldly go...
As I review my listening notes, I see that the Primus 150 excelled in three areas unusual for a $300/pair speaker of this size. Then I rechecked the press materials from Infinity and discovered that the 150 actually retails for $198/pair. I shook my head in amazement as I pondered:

1) The natural and uncolored mid-range of the Primus 150 rendered all male and female vocals with a rich, natural, holographic sense of realism and body, without a trace of coloration. On classical and jazz recordings, woodwinds, pianos, and acoustic guitars were reproduced with natural attack and decay, with harmonics into the extended, natural, and airy high frequencies.

Classical and jazz recordings were reproduced with natural attack and decay.

2) The levels of detail resolution and low-level dynamic articulation of the Primus 150 were unheard of for $200/pair. This attribute, combined with the Primuses' ability to disappear while reproducing well-recorded works on a wide, deep soundstage, may make the 150 the speaker for classical music aficionados who cherish the reproduction of concert-hall ambiance. Moreover, the speaker is very useful as an analytical tool; I could analyze the articulation of a soloist's style as well as decipher multipart instrumental arrangements.

3) Although low- and mid-bass were inaudible with these speakers, the quality of the upper bass was reproduced with extraordinary clarity and authority. The bass performance of the little Primus 150 excited me. On "Feel No Pain," from Sade's Love Deluxe (CD, Epic

**Measurements**

A fundamental choice faces every designer of small speakers: extend the low-frequency performance but accept a low sensitivity, or maximize sensitivity and live with the curtailed bass response? The Primus 150's designer has chosen the latter course; while Bob Reina noted its lightweight bass in his auditioning, the speaker offers above-average sensitivity, at an estimated 89.5dB(2)/2.83V/m. In addition, its impedance is also fairly amplifier-friendly, remaining above 5 ohms for most of the bass, mid, and treble ranges (fig.1). The impedance magnitude does drop to 3.9 ohms above the audioband, but this will not be a problem, given the low amount of energy in music at this frequency, particularly with CD playback.

The slight wrinkle that can be seen in the impedance traces at 300Hz implies the presence of a resonant mode of some kind in this region. When I examined the cabinet's vibrational behavior with a simple accelerometer, I did find a very strong mode present on all surfaces (fig.2), but it was a little higher in frequency at 313Hz. BJR noticed no lower-midrange coloration that could be laid at the feet of this mode, but such high-Q resonances can often "hide between the cracks" with some kinds of music. However, as the frequency of the E-flat above Middle C is 309Hz, I would have expected this cabinet mode to be excited at least some of the time. The saddle at 70Hz in the impedance-magnitude plot indicates the tuning of the Infinity's reflex port. The expected notch in the woofer's nearfield response plot (fig.3, blue trace) occurs slightly higher in frequency, at 74Hz, while the peak in the port's output (fig.3, red trace) is higher still: between 80Hz and 90Hz. The complex sum of the woofer and port outputs (fig.3, black trace below 300Hz) peaks up a little, but this will be almost entirely due to the nearfield measurement technique. The Primus 150 does roll off rapidly below 80Hz.

![Fig.1 Infinity Primus 150, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)](image1)

![Fig.2 Infinity Primus 150, cumulative spectral-decay plot calculated from the output of an accelerometer fastened to the cabinet's side panel (MLS driving voltage to speaker, 755V; measurement bandwidth, 2kHz).](image2)

![Fig.3 Infinity Primus 150, anechoic response on tweeter axis at 50°, averaged across 30° horizontal window and corrected for microphone response, with the nearfield responses of the woofer and port and their complex sum, taking into account acoustic phase and distance from the nominal farfield point, plotted below 300Hz, 1kHz, and 300Hz.](image3)
The bass guitar was deep and realistic, especially when I cranked the volume, although at such volumes the high-level dynamic limitations of this small speaker were readily apparent — beyond a certain volume, the 150 simply ceased to get louder. But at no time did instruments sound congested, and Mann’s voice never lost its natural richness.

John Rutter’s Requiem (CD, Reference RR57-CD) brought out all of the Primus 150’s magic. The solo flute passages were extended and airy, the solos blooming ethereally in the acoustic of the naturally reverberant church. With this oft-played recording, I’ve heard this much room sound only from speakers costing $1000/pair or more. I was able to follow each individual vocal line of the chorus as easily as I have with any speaker. Although the pipe organ’s low pedals went missing in action, those that were audible were spot on — and I’ve played many a church organ in my time.

Jerome Harris’ “The Mooche” (CD, Editor’s Choice, Stereophile STPH016-2) was another winner. The string bass was natural, the trombone sufficiently blatty, the vibes’ transient attacks perfect. I found myself analyzing each individual instrumental line as if staring at a score, but it was also difficult to take notes — I was mesmerized by the music. My final note: “Why doesn’t John Atkinson record more jazz?”

The Infinity’s realistic vocal reproduction was best demonstrated by well-recorded LPs. On Classic Records’ reissue of Cassidy, Stills & Nash (LP, Atlantic/Classic SD 8229), the rich three-part vocal blend on “Guinevere” had a spooky, master-tape-like quality I’ve never heard from my scratchy old Atlantic pressing.

Finally, although I’ve been harping
on the speaker’s limitations in high-level dynamics and bass extension, these babies could indeed rock. I cranked up “When the Levee Breaks,” from Classic’s reissue of Led Zeppelin IV (LP, Atlantic/Classic SD 7028). John Paul Jones’ ostinato bass lines rumbled realistically, and Bonzo’s bass-drum thwacks shook the room a tad, although there were some limitations to the speaker’s ability to convey high-level rock drama.

The competition?
I compared the Primus 150 to the Polk RT25i (discontinued, $319/pair when last offered), the Paradigm Atom ($189/pair), and the NHT SB-3 ($600/pair).

The Polk RT25i seemed a bit lighter in overall presentation — its highs were more extended and articulate — but these frequencies didn’t sound as delicate as they did through the Infinity. The Polk’s midrange was neutral but did not sound as rich, detailed, or dimensional as the Infinity’s, this most noticeable with piano recordings. The Polk’s bass performance was a bit more extended and dynamic, although the Polk also suffered, overall, from the same limitations in high-level dynamics as did the Infinity.

The Paradigm Atom’s mid-bass warmth made the reproduction of the bass drum a bit more prominent than through the Infinity, and the Atom has a warm, balanced sound overall. However, the Paradigm didn’t approach the Infinity’s high-frequency articulation and extension, nor did it resolve as much inner midrange detail. High-level dynamics were also constrained through the Paradigm, though the Infinity had superior low-level dynamic articulation.

The NHT SB-3 was the best of the lot in terms of bass extension and resolution of high-level dynamics. It shared Paradigm’s overall warm and balanced presentation, although the NHT resolved more midrange and high-frequency detail than did the Paradigm. Despite its low price, however, the Infinity exceeded the NHT in the areas of midrange detail resolution and transparency.

The final frontier
I’ve tried to avoid writing another Bob Reina foaming-at-the-mouth rave about yet another new benchmark on the affordable speaker front. Oh, what the hell. Sure, a speaker the size and price of the Infinity Primus 150 can’t be expected to excel in the areas of bass extension and high-level dynamics, but its shortcomings in this area did not detract one iota from my musical enjoyment. The Primus 150 has achieved a standard of performance at the $200-or-under price point that I didn’t think was possible. Moreover, in the area of its greatest strength, its midrange detail and low-level dynamic resolution, it sounded like a $1000/pair speaker. I can’t wait to hear what a larger, more expensive speaker in the Primus line sounds like.

is wide and even, even in the top audio octave. Nor is there any trace of the usual off-axis flare at the bottom of the tweeter’s passband. All things being equal, this behavior suggests that the Infinity will sound relatively neutrally balanced, and that its stereo imaging will be stable and well-defined (though the resonances at 313Hz and 800Hz that I mentioned earlier might “pull” images at these frequencies to the sides). In the vertical plane (fig.5), the Infinity’s balance remains neutral 5° above and below the tweeter axis, but large suckouts develop in the crossover region at greater off-axis angles. High stands will work better than low ones if the speaker is not to sound a little hollow.

The Primus 150’s step response (fig.6) reveals that both drive-units are connected with the same, positive, acoustic polarity. While the slight resonant mode at 8.6kHz might add just a touch of wiriness at high levels, the Infinity’s cumulative spectral-decay plot (fig.7) is otherwise very clean. Although I was a little bothered by its midrange resonances, the Primus 150’s overall measured performance is excellent, considering the Chinese-made speaker’s bargain price.

—John Atkinson

Associated Equipment

Analog sources: VPI TNT IV turntable, Inmedia RPM tonearm, Koetsu Urushi cartridge; Rega Planar 3 turntable, Synix PU-3 tonearm, Clearaudio Virtuoso Wood, Aurum Beta S cartridges.

Digital sources: California Audio Labs Icon Mk.II Power Boss, Creek CD53 Mk.II CD player; Pioneer DV-333 DVD-Video player.

Preamplification: Vendetta Research SCP-2D phono stage, Audio Valve Eklipse line stage.

Power amplifier: Audio Research VT100 Mk.II.

Integrated amplifier: Creek 5350SE.

Loudspeakers: NHT SB-3, Paradigm Atom, Polk RT25i.


Accessories: Various by ASC, Bright Star, Celestion, Echo Busters, Salamander Designs, Simply Physics, Sound Anchor, VPI.

—Robert J. Reina

Fig.7 Infinity Primus 150, cumulative spectral-decay plot at 50° (0.15ms risetime).
Isophon Europa II loudspeaker

Unless you’ve been on active duty in the Middle East, you’re aware that Mobile Fidelity Sound Lab is back in business. During Stereophile’s Home Entertainment 2003 show in San Francisco last June, Kal Rubinson and I played hookey to visit MoFi mastering engineer Paul Stubblebine’s recording studio, at 1340 Mission Street. As we sat spellbound, Paul played the original four-track, 1/2”, 1-nil master tape of Stanislaw Skrowaczewski and the Minnesota Orchestra’s legendary 1974 recording of Ravel’s Boléro and Daphnis et Chloé. Stubblebine fed the four discrete channels from the specially modified ReVox reel-to-reel deck to a modern surround system. The master tape produced the cleanest, purest sound I had heard in a long time.

That audio epiphany rejuvenated my interest in recorded music, and greatly boosted my enthusiasm for listening sessions at HE2003. Coleman Brice, MoFi’s public relations specialist, promised KR and me SACD copies of that magical master tape when it became available. I couldn’t wait.

Five months later, a small package arrived at my house, in it the finished SACD. I was in the middle of reviewing a loudspeaker I’d been entranced by at that same show—the Isophon Europa II loudspeaker. Because I’d actually heard the master tape of this new SACD, it seemed the perfect reference disc for testing the speaker.

1 The recording engineer was Marc Aubert. This four-track master was released on a Vox LP; and was later encoded with Sansui SQ matrix system for release on a quadraphonic LP.

Description: Floorstanding, 3.5-way, loudspeaker with bandpass woofers loading. Drive-units: 1” soft-dome tweeter, three 4" paper-cone midrange drivers; two 9", long-exursion, paper-cone woofers. Bass alignment uses symmetrical double bandpass, eighth-order, high-pass-filtered (18Hz), single-vent system. Crossover frequencies: 140Hz, 3.4kHz, with Bessel filter characteristics. Frequency response: 40Hz–20kHz, ±3dB (36Hz –3dB resonant frequency). Sensitivity: 86.5dB/2.83V/m. Nominal impedance: 6 ohms. Recommended amplification: 300W continuous, 560W peak. Dimensions: 47.6” (1220mm) H by 10” (254mm) W by 18” (460mm) D. Weight: 123 lbs (56kg). Finishes: Aluminum; wood veneers, piano-black finish also available. Serial number of units reviewed: 321042L/R. Price: $13,020/pair (aluminum or piano-black finish); $10,540–11,064 (other finishes). Approximate number of dealers: 8. Warranty: 10 years.

Manufacturer: Acoustic Consulting, Merklingerstrasse 67, D-71727 Renningen, Germany. Tel: (49) 7159-920161. Fax: (49) 7159-920162. Web: www.isophon.de. US distributor: Symcore Technologies, 10855 NW 33rd Street, Miami, FL 33172. Tel: (786) 845-6818. Fax (786) 845-8496. Web: www.symcore.com.

Designer Enthusiasm

The arrival of the Isophon Europa II seemed an ideal time to interview the speaker’s designer, Roland Gauder, who visited me the day the loudspeakers were delivered. Gauder is tall, slim, and muscular, with a ready smile and clear, articulate English. He listened enthusiastically to the Europas in my listening room, and helped position the furniture to optimize the sound. He was bursting with eagerness to explain the Europa’s unique design features: the acoustic bandpass filtering for the woofers, and the special configuration of the midrange drivers.

The Isophon Europa II is a tall, slim, floorstanding loudspeaker with beveled sides. It shares its aluminum veneer with a number of other high-end floorstanders, including the Krell LAT-1 and the Piega C-8 Limited. The Europa’s tweeter and two of its three midrange drivers are set securely into a shiny chrome faceplate at the top of the column, with a 25.25" by 2" vertical slot running most of the front panel’s length and covered by a grille. The third midrange driver is mounted in the side of the enclosure. The front midrange and HF drivers have no protective covers.

A bandpass woofer uses conventional drive-units, but instead of these radiating into the open air, they fire instead into an internal cavity, which is then vented to the outside world. Gauder decided to use this technology in the Europa because he was not satisfied...
with more conventional bass-reflex, or acoustic-suspension bass designs. Each of
the two 9" woofers has a 2" long-throw voice-coil, a heavy paper cone, and its
own separate sealed subcabinet to create acoustic (rather than electrical) bandpass
loading. They fire into an internal chamber, with two ports opening into the
long, large slot on the front baffle, to provide low air speed at high volumes. Foam
placed in the vents provides additional filtering for frequencies above 80Hz.

Gauder developed a midrange-driver configuration that he calls the Acoustic
Hologram Technology (AHT), to solve the problem of having a midrange driver
that is both ultra-fast and has high dynamic range. The ideal midrange driv-
er is light, with a small diameter and excursion. If a midrange is asked to output
frequencies below 200Hz, it needs to develop relatively large excursions, which
can produce audible distortions. Gauder uses three 4" drivers. Each midrange unit
has a basket of diecast aluminum and a highly damped paper cone with low
directivity, and is mounted in its own 3.7-
liter subcabinet filled with sheep's wool.
Two of the three midrange units—one mounted on the Europa's front, the other
on the side of the enclosure—cover the
140–300Hz range. The third driver is
mounted immediately beneath the
tweeter, and covers the rest of the mid-
rang, crossing over at 3.4kHz.

The 1" soft-dome tweeter has a double
magnet system and has been designed
with a gradual rise in frequency response,
from 12kHz to 20kHz, to account for the
sound absorption of the air. The tweeter's
response is delayed by a second-order
passive network to achieve time align-
ment with the midrange drivers.

The Europa II is designed for triwiring,
with three pairs of WBT jacks and
separate crossovers for the woofers,
midranges, and tweeters. The woofer
crossover uses a large-gauge inductor and

**Measurements**

The Europa II is of average voltage
sensitivity, at an estimated
86.5dB(W)B/2.83V/m, which is to spec-
ification. Its plot of impedance magni-
tude and phase against frequency (fig.1)
reveals it to be a relatively easy load for
the partnering amplifier to drive, its
impedance resembling a 6 ohm resistor
above 200Hz. This graph is more com-
plex in the bass, which is to be expect-
ed from the bandpass woofer topology,
with a minimum value of 3.4 ohms at
25Hz. The electrical phase angle gets
extremely capacitive at subsonic fre-
cuencies, due to the presence of a series
capacitor in the woofer feed. This will
not be a problem for amplifiers unless
they are used in a vinyl-based system
with an underdamped resonance
resulting from the tonearm mass and the
luggage compliance.

Fig.1 is free from the discontinu-
ities that would indicate the presence
of cabinet resonances. Examining the
vibrational behavior of the Isophon's
cabinet with a simple accelerometer
revealed the efficacy of the metal-
sheathed construction and the internal
bracing at controlling resonances.
Other than some slight flexing at
60Hz (the center of the region cov-
ered by the bandpass woofer), the
only mode I could find was at 328Hz
(fig.2). This was strongest on the top
panel, but should have no negative
subjective consequences.

Fig.3 shows the individual outputs
(of from left to right) the bandpass
woofer, the midrange units, and the
tweeter. The crossover frequencies are
as specified, with steep slopes, and the
series capacitor in the woofer feed
results in a 30dB/octave rolloff below
40Hz. As LG commented, the
Isophon "filtered out the very deepest
bass notes." Commendably, given that
the inevitable problem with bandpass
woofers is the presence of high-
frequency resonances in the port out-
put, the high-frequency rollout of the
Europa's vertical slot is very clean. The
three midrange units cover a wide
passband, from 140Hz to 3.4kHz, yet
their output is smooth and flat within
that range. There is a slight peak pre-
ent in their response at 6kHz, but
this is well-suppressed by the cross-
over. The tweeter's output is also flat
within its passband, though it starts to
roll off on-axis above 16kHz.
high-current capacitors. The speaker's quality of cabinet construction is very high: 1" MDF separated internally by wooden panels into six chambers to enhance stiffness and reduce internal resonances. The damped metal bottom plate has sockets for the supporting spikes.

**Sound**

Although each Europa II weighs 123 lbs, it was easy to maneuver them around the listening area in search of the optimal positions. I found they did best when placed 5' from the front wall and 5' from the sidewalls, about 7' away from my listening chair. This situated them near the short wall of my lightly damped, rectangular listening room (26' long by 13' wide by 12' high). The other end of the room opens into a 25' by 15' kitchen.

The Europas were oriented so that their side-firing midrange drivers faced each other, to lessen reflections from the sidewalls, as recommended by Isophon. The Europa is made in "handed" pairs that share a single serial number, followed by an R or an L to designate the channels served.

The Europa II is of average voltage sensitivity. I was able to drive it to loud sound levels with the Mark Levinson ML-2 monoblocks, which put out just under 40W RMS into the speaker's nominal impedance of 6 ohms. For the listening tests, I also used a Mark Levinson No.334 (200Wpc into 6 ohms) and a Krell FPB 600c (1kWpc into 6 ohms).

I began by checking the Europa II's low-frequency in-room response. I used the 20–200Hz sweep signal generated by the room-tuning setup program that comes with Velodyne's DD-18 subwoofer, and verified it with the 1/3-octave warble tones at –20dB on Stereophile's Test CD (STPH002-2). I set my RadioShack sound-level meter to its C weighting, in slow ballistics mode, and

How these individual responses sum on the tweeter axis is shown in Fig.4. The treble region is lifted by a couple of dB. This is not enough to make the speaker sound bright, but is certainly enough to make it sound detailed and vibrant in the highs, as LG found in his auditioning. Somewhat surprisingly, the midrange units didn't reach down far enough in frequency to achieve a smooth blend with the bandpass woofer, the result being a relative lack of energy in the upper bass. However, predicting the subjective effect of this behavior is difficult, as this region is dominated by the room's acoustics.

Laterally, the Europa's dispersion is wide and fairly even below the top audio octave (Fig.5), though with a slight flare evident at the bottom of the tweeter's passband that, in conjunction with the on-axis treble plateau, will make the speaker sound a touch bright in lively rooms. Conversely, the tweeter gets very directional above 7.5kHz, which will make the speakers sound lacking in air and HF extension in large or well-furnished rooms. In the vertical plane, the speaker's dispersion plot (Fig.6) shows very little change in balance over a ±15° angle centered on the tweeter axis—just as well, given that

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**Fig.5** Isophon Europa II, lateral response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 9°–5° off-axis, reference response, differences in response 5°–9° off-axis.

**Fig.6** Isophon Europa II, vertical response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 15°–5° above axis, reference response, differences in response 5°–15° below axis.
performed by Marcel Dupré on Reitai (CD, Mercury Living Presence 434 311-2), shuddered the air in my listening room. Similarly, the deepest notes in Gnomus, from Jean Guillou's organ transcription of Mussorgsky's Pictures at an Exhibition (CD, Dorian DOR-90117), rattled the cabinets in my listening room. But the Europa's bass system did so well with organ music because it played in a controlled fashion with a minimum of bass overkill. The organ accomplishment to John Rutter's A Gaelic Blessing from Requiem, had just the right amount of volume and pitch definition, not the boop I've heard from lesser speaker systems.

Via the Isophon speakers, Owen Reed's La Fiesta Mexicana, from Fiesta (CD, Reference RR-38CD), opened with weighty, solid, well-defined bass-drum beats mixed with shimmering, reverberating chimes. And all of the following were easily heard and felt: the dense, synthesized bass notes that depict supernatural footsteps in "No Sign of Ghosts," from the Casper soundtrack (CD, MCA 11240); the soft but ponderous bass-drum beat on "Cosmos Old Friend," from the Sneakers soundtrack (CD, Columbia CK 53146); the sudden heartbeats that crescendo at the beginning of "Speak to Me," from Pink Floyd's Dark Side of the Moon (SACD), Capitol 58236 2); the raspy, edgy, throbbing didgeridoo that opens David Hudson's "Rainforest Wonder," from Didgeridoo Spirit (CD, Indigenous Australia A12003D); and the subterranean synthesizer rumblings on "Assault on Ryan's House," from the Patriot Games soundtrack (RCA 66051-2).

However, the Europa's bandpass system filtered out the very deepest bass notes. I heard only faintly the sustained organ chord that ends the Passage from The Dream of Gerontius on Test CD 2. I totally missed the thuds and rumblings in "The Carnataur Attack," from the Dinosaurs soundtrack (CD, Walt Disney 50086 06727). And I could just barely discern the sustained subterranean synthesizer chord that introduces Richard Strauss' Also sprach Zarathustra, on the Time Warp compilation (CD, Telarc CD-80106).

Last but not least, I listened to Mobile Fidelity's SACD reissue of that 1974 Skowrackowski-Minnesota recording of Ravel's Boléro, Pavane for a Dead Princess, and Daphnis et Chloé (MFSL UDSACD 4002). Playing the Pavane over the Europa IIIs produced an immediate, pleasant flashback to that Saturday in May when I sat in Paul Stubblebine's studio, eyes closed and leaning back, letting wave after wave of clear, translucent, reach-out-and-touch-it sound sweep over me.

**Conclusions**

Isophon's Europa II delivers open, extended, nonfatiguing sound, and exactly positions images in the soundstage. This imaging capability was enhanced by its excellent deep-bass extension and definition. While its price of $13,020/pair for the aluminum-finished model is close to that of the coaxial-ribbon Piega C-8 Limited that I reviewed in January ($12,000/pair), the Europa's real competition will come from less expensive floorstanding systems such as the MartinLogan Prodigy ($10,000/pair), the Quad ESL-989 ($9500/pair), and the InnerSound Eros Mk.III ($8000/pair). Although each of these loudspeakers has excellent treble extension, midrange definition, and soundstaging, the Isophon Europa II earns its higher price tag with its tight, well-defined bass. One must be willing to spend more, for a speaker like the Revel Ultima Salon ($15,000/pair), to grab the handful of deeper Hz missed by the Europa II.

Lovers of pipe organ, percussion, and special effects, take notice: The Isophon Europa II might sweep you away, too.

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**Associated Equipment**

**Analog source:** Linn Sondek-Lingo turntable, Linn Ittok tonearm, Spectral moving-coil cartridge.

**Digital sources:** Krell KRC-28 CD player, Sony SCD-C555ES SACD/CD multichannel player.

**FM tuners:** Day-Sequerra Classic, McIntosh MR-78, Sony ST-5000.

**Preamplification:** Mark Levinson ML-7 preamplifier with L3A moving-coil phono cards, Duntech MX-10 head amplifier, Margulis phono section, Krell KCT preamplifier.

**Power amplifiers:** Mark Levinson ML-2 monoblocks, No.334, Krell FPB 600c.

**Loudspeakers:** Quad ESL-989, Velodyne DD-18 subwoofer.

**Cables:** Interconnect: Red Rose Silver Ones, Krell CAST, Levinson Silver single-ended, Bryston balanced. Speaker: Mark Levinson HFC 10, PSC Pristine R50 biwire double ribbon, Ultralink Excelstor 6N OFHC, Coincident Speaker Technology CST 1. — Larry Greenhill
Avalon Eidolon Diamond. Your eyes may espy an Eidolon, but your ears and heart will exclaim Diamond. Note the solid diamond diaphragm tweeter, a first. And the refined woofer design with deeper, more refined bass. Oh, and a midrange of astonishing clarity and impassioned beauty. Don't take our word for it; hear for yourself in our acoustically-designed and meticulously constructed state-of-the-art listening rooms. As always, no hurry, no pressure.
My last visit to Planet Halcro transformed my audio life. All but the newest readers will recall that the Australian company’s dm58 power amplifier was Stereophile’s “Amplification Component of the Year” and overall “Product of the Year” for 2002. To this day, I have yet to hear any amplifier that equals the dm58’s combination of complete neutrality, harmonic generosity, lightning reflexes, and sense of boundless power that is difficult to describe. Though some others have come close, the dm58 shines as a singular beacon of excellence among power amplifiers.

After designing an amplifier that turned much of the audio world on its head, Halcro’s head honcho, Bruce Candy, turned his attention to developing a preamplifier to match what he’d already wrought. Two years later, the results appeared: the dm8 line preamplifier and the subject of this review, the $15,990 dm10 preamp, which adds a full-featured phono stage to the dm8. Would lightning strike twice, or was the dm58 a once-in-a-lifetime accomplishment for any designer?

Rocket science
Like the dm58, the dm10 is a strikingly original piece of industrial design. It fairly bristles with cutting-edge technology, and its appearance matches its space-age internals. Matching Halcro’s amplifiers, the box containing much of the preamp’s innards is suspended between two pillars, resulting in a component that doesn’t look or feel as hefty and bulky as it is. Bulky it is, though; the thing is built like a bank vault and weighs a chunky 50 lbs. The clean, straightforward front panel contains all of the necessary switching, and an LCD panel shows input, stereo/mono status, attenuation, polarity, and the input in use.

As is his wont, designer Bruce Candy set some formidable goals for his preamp: unmeasurably low distortion of all kinds, exceptionally low noise, immunity from electromagnetic interference, minimal electromagnetic emissions, and bulletproof reliability. “Exceptional” regulation of the power supply was another central concern; the power supply switching frequency was chosen to be far above the audio band, at more than 200kHz. Top-quality parts are used throughout the dm10, including Vishay resistors and FKPI capacitors.

Description: Full-function preamplifier with remote control and switch-mode power supply. Inputs: 3 unbalanced (XLRs), 3 balanced (XLRs) (both conventional voltage mode); 1 current mode (RCAs). Phono input has variable phono capacitance and load resistance. Outputs: 2 pairs unbalanced (RCAs), bridgeable and 2 pairs balanced (XLRs), bridgeable, both conventional voltage mode; 2 pairs current mode (RCAs), 1 pair for unbridged connection, the other pair used in bridged mode; 1 pair tape output (RCAs); ¼” stereo headphone jack. 6-pin XLR for control data. Maximum voltage gain: 20dB, line stage; 32dB, 38dB, or 44dB, phono MM, +27dB for MC. Line input impedance: 20k ohms balanced, 10k ohms unbalanced. Phono input impedance: 10k–60k ohms plus 60pF through to 350pF, both continuously variable (MM); 220 ohms plus 4.7nF (MC). Current input mode: 50 ohms. Output impedance: 340 ohms balanced, 170 ohms unbalanced; >30k ohms current mode; 10 ohms headphones; 340 ohms tape. Distortion: unmeasurable, below noise floor. At full specified output, <250 parts/billion (~132dB) for balanced and unbalanced and current modes. Phono equalization: RIAA ±0.5dB. Power consumption: 100W max. AC mains voltage, 40–200Hz; 85–240V AC, 120–340V DC (power supply will operate up to 270V, but IEC sockets rated only up to 240V by regulatory authorities).

Dimensions: 17.5” (448mm) W by 9.4” (240mm) H by 15.6” (400mm) D. Weight: 50.6 lbs (23kg).

Serial number of unit reviewed: 0054.

Price: $15,990. Approximate number of dealers: 16.


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1 The fullest available technical information regarding the dm10’s concept and design is available at www.halcro.com/pdfilialcrocro_preamplifier_design_concept.pdf.
Each input can be assigned to any source component via switches above each set of inputs, the name of the source then being visible on the screen. Seven sets of inputs and multiple outputs are provided, including two sets available for current source connection. Most notably, the dm10 features a fully adjustable phono stage in which gain — and, for MM cartridges, capacitance and resistance — can be varied over a wide range. When used with an MC cartridge, loading is fixed at 220 ohms and 4.7mF.

The following description of the dm10's technical particulars is necessarily sketchy, as Candy is notably closemouthed about the specifics of his designs. The phono stage has four stages: an "ultra-low-noise input stage" with a 20X gain for MC cartridges, which can be switched out when using MM or high-output MC carts. This is followed by a high-input-impedance FET amplifier with 4X or 8X gain options. The output of this portion of the circuit is then fed to a 15Hz, third-order, high-pass Bessel filter that serves as a rumble filter. Next, RIAA equalization is applied, and the output of the RIAA stage is fed to a "low-noise input selector stage" that has a gain of 2X, depending on the gain of the selected phono input. Two mini toggle switches on the dm10's rear panel control all of this: one selects MM or MC, the other 1x, 2x, or 4x overall phono gain (my reference Dynavector XV-1S 32mV output needed all of the available gain). These are easy to bump when reaching around the back of the unit or changing cables; I did so on a few occasions, only to find myself wondering where the gain had gone. The line stage, as far as I can tell from Halcro's white paper, also features four distinct gain stages. The dm10's volume control includes two identical stages in series.

The big Halcro features extensive microprocessor control. Each audio channel has its own controller, a second serves the front-panel display and user interface, and a fourth controls the activity of the other three processors. All switching functions are performed by expensive-sounding relays. Relay switching was chosen because it offers zero "on" resistance, infinite "off" impedance, very low "off" capacitance, and zero distortion. While the dm10 doesn't

All the dm10's switching functions are performed by expensive-sounding relays.

Measurements

It's rare to find ground-lift switches in consumer audio equipment, much though they are needed, but the Halcro dm10 is one such component. Arranging the grounding between my Audio Precision System One to get the lowest noise was therefore a relatively simple business, without me having to reach for a "cheater" AC adapter. I also used the dm10's supplied Shunyata AC cord. (Note that I was only able to measure the dm10 in conventional voltage mode. I also didn't test the headphone jack, which I will do in a "Follow-Up." )

I first tested the dm10's phono stage. The MM input impedance at 1kHz was a high 53k ohms with the rotary control at its rightmost position ("60k"). 9.8k ohms with it set to the leftmost position ("10k"). The MC input impedance was 220 ohms as specified. The three gain settings of the moving-magnet setting provided 32dB, 38dB, and 44dB of gain at 1kHz, exactly as specified, while switching in the moving-coil stage added another 26dB. (All figures measured at the tape output jacks and with the AP source impedance set to 25 ohms.) The phono input inverted absolute polarity, and the RIAA error (see fig.1) was very low, at less than ±0.1dB. Fig.1 also shows that the Halcro implements the IEC-recommended LF rolloff, reaching -0.5dB at 30Hz and -3dB at 15Hz. The phono-stage channel separation at 1kHz was excellent, at almost 80dB.

The dm10's phono stage was very quiet; the A-weighted signal/noise ratio with the input set to MM, highest gain, measured 83.2dB (ref. 5mV input), this reducing to a still excellent 67.1dB, unweighted, wideband. Set to highest-gain MC, the S/N ratio was a still superb 72dB, A-weighted (63dB, unweighted). Because of the low noise, I was able to get an accurate reading of the phono stage's distortion — a mere 0.0007% at 1kHz for the 32dB MM setting with a 6mV input signal, with the second harmonic the highest in level at just -103dB (not shown). Correlating with that low distortion, the dm10's phono overload margins were superb. For the MM setting in the lower two gain settings, I measured 27dB at 20Hz and 25.9dB at 1kHz and 20kHz, these figures dropping to 21dB and 19.9dB for the highest gain mode. The corresponding MC figures were 21.3dB and 19.9dB for the two lower gain settings, and 15.2dB and 13.9dB, respectively, for the highest gain mode. The latter figures are good rather than great, but it must be remembered that this mode's very high gain of 70dB will be used only with very low-output cartridges.

As set by PB for his auditioning, the dm10's balanced line-stage gain was 5.53dB with the volume control set to "0." 25.53dB with it set to "20." The figures for the unbalanced input to unbalanced output were 6dB lower, as expected. Both balanced and unbalanced I/O jacks preserved absolute polarity, and while the input impedance was almost exactly twice what specified, at 21k ohms unbalanced and 43k ohms balanced, the difference is in the right direction for optimum system matching. The output impedance was basically to speci-
allow the user to vary the individual gain of each input, it reaches the same end by remembering the last volume setting used for each source.

Topnotch mechanical design was also a priority. A switching power supply such as the dm10’s necessarily contains inherently noisy digital circuits. To solve this problem, Halcro encases the audio, display-panel, and power-supply sections in its own internal aluminum enclosure, in addition to further extensive shielding.

There are more extras, including a headphone amp (which I didn’t try, as I couldn't find my elderly AKG 240 headphones) and a 5V trigger that allows the dm10 to turn on Halcro power amplifiers by remote control. A thorough remote with excellent ergonomics is included, as is a very complete owner’s manual.2 As with the dm58, there appears to be no way to open up a dm10, so the exact configuration of the electronics remains a mystery shrouded in an enigma.

Countdown
Installation was straightforward: I set it on my reference Grand Prix Audio Monaco Modular equipment rack on a GPA Fi carbon-fiber shelf. The dm10’s jacks look to be of superb quality, and were a tight fit with every cable I used.

Break-in time was minimal; within 25 to 30 hours, the Halcro had lost its initial, somewhat pinched sound and settled into an unchanging routine. I left the unit fully powered up but in Mute mode when not listening. Despite this extended duty, it never became more than 0.01% THD+N.

2 My review sample of the dm10 arrived nestled in form-fitting foam and packed in a heavy-duty armored oval case. The preamp was further wrapped in a fabric overlay, and white gloves were provided for handling. The dm10 is also supplied with a Shunyata Diamondback power cord, the first instance I can recall where a manufacturer has supplied an aftermarket AC cord as part of the package.

The balanced line-stage frequency response was perfectly flat from 20Hz to 20kHz (fig.2), -0.4dB at 10kHz, and 1dB down at a high 14kHz. The unbalanced response was basically the same as the balanced, and the response didn’t change with the volume-control setting. One thing that should be noted in this graph is the slight (0.2dB) channel imbalance, which persisted at all volume-control settings. (The balance was set to dead center for the measurements.) The line-stage channel separation (not shown) was superb, at almost 130dB at 1kHz.

The dm10 can deliver very high output voltages with virtually zero distortion. Figs.3 and 4 show the THD+noise percentage in the pre-amplifier’s output plotted against voltage for the balanced and unbalanced outputs, respectively. At our usual 1% THD clipping point, the dm10 could output a balanced 16V into a high 10k ohms, and more than 10V even into the demanding 600 ohm load. (The corresponding unbalanced figures were half these voltages, as expected.) Note the downward slope in these graphs; this means that at voltages less than the clipping point, the measured THD+noise is actually dominated by noise, not distortion. Therefore, plotting the THD+noise against frequency at a 10V balanced output and 7V unbalanced (fig.5) really shows only noise, at least below 10kHz. With the input shorted and the volume control at its

slightly warm. During four months of listening, the dm10 never misbehaved, produced any untoward noises, or did anything other than perform its appointed tasks with perfect precision—as well it should for $15,990.

Blastoff
In accordance with the “change one variable at a time” requirements of proper audio reviewing, I first listened to the dm10 strictly as a line stage. To get a grasp of the Halcro’s sound as a line stage, I stuck with my familiar Aesthetix Io Signature and Manley Labs Steelhead phono stages for LP listening. Unsurprisingly, the dm10 displayed much of the familiar sonic character of its sibling amplifiers. Paramount was its supernatural quiet. The noise floors of Halcro components simply must be experienced to be appreciated, as there is nothing else like them. This silence allows for an almost

**Fig.2** Halcro dm10 line stage, balanced frequency response at 1V into 100k ohms with volume control at "0" (0.5dB/vertical div., right channel dashed).

**Fig.3** Halcro dm10 line stage, distortion (%) vs balanced 1kHz output voltage into (from bottom to top): 100k ohms, 600 ohms.

**Fig.4** Halcro dm10 line stage, distortion (%) vs unbalanced 1kHz output voltage into (from bottom to top): 100k ohms, 600 ohms.

**Fig.5** Halcro dm10 line stage, THD+N (%) vs frequency at (from bottom to top): 10V balanced into 10k ohms and 600 ohms, 7V unbalanced into 10k ohms and 600 ohms.

*Stereophile, April 2004*
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WorldRadioHistory
superb pitch definition. The dm10 handled ultra-deep synthesized low bass with ease and consistent excellence.

Voices and midrange-heavy instruments were presented with openness, harmonic completeness, and wholly individualized character. Carla Bley’s Night-glo (LP, WATT/16) features some especially creamy and rich brass and woodwind arrangements on the title track and “Pretend You’re In Love.” The Aesthetix and Halcro come through like champs on this swoony adult makeout music. The dm10’s midrange and treble were unconditionally graceful and exceeding smooth, the top octaves utterly effortless and equally extended—a paradigm of genuine high fidelity.

Some, including our own Sam Tellig, have questioned that Halcro’s electronics sound a bit cool. While I respectfully disagree with Mr. T as to the dm58, I did hear a meager degree of that coolness in the dm10’s line stage. Images were fully formed and dimensional, but ever so slightly less palpable than when heard through the VTL TL-75. I occasionally—not often—wished for just a bit more warmth, usually in the dm10’s presentation of CDs. Far more often than not, the Halcro’s extraordinary resolution and dynamics overcame my petty carping. Perhaps I was simply hearing artifacts of the digital process that have been veiled by other preamps.

Explosive dynamics were also much to the fore. The Poem of Chinese Drums and Hugh Masekela’s “Stimela,” both from Burmester’s Demonstration CD 3, had genuinely startling force from top to bottom. The way the drums popped into space when they enter before the first chorus of Elton John’s “Levon,” from the remastered Madman Across the Water (Japanese CD, Universal UIC4-9104), was wondrous. Things happened with almost brutal immediacy through the dm10, and the bigger those moments were, the more I could have sat and counted the heads and bodies of the individual background singers at the end of Elton’s “Tiny Dancer.”

**Escape velocity**

While I was deeply impressed by the dm10’s performance as a “mere” line stage, that didn’t prepare me for the quality of its phono stage. I’ve lived with some remarkable phono preampifiers: the Aesthetix Io Signature, the Manley Steelhead, and, for a few weeks each, the +820k FM Acoustics 222 and the two-chassis, $32,000 Boulder 2008. The dm10’s phono preamplifier was fully competitive with the Boulder, which is everything Mikey Fremer said it was.

Again, the most remarkable aspect of Halcro’s phono stage is its complete and unconditional background silence. The only comparably quiet standalone phono stages I’ve heard are the megabucks Boulder and FM Acoustics.\(^3\) The dm10’s silence permitted previously unheard microdetails to rise from the noise floor and flesh out the sonic picture in a thousand little ways that added life to the illusion of recorded music.

**Start** with the best: Hearing Frank Sinatra singing “Guess I’ll Hang My Tears Out to Dry” or “One for My Baby,” from Only the Lonely (LP, Mobile Fidelity MFSL 1-137), through the dm10 was one of those special audio moments. Every detail of the swell and reach of Sinatra’s voice, his uncanny ability to internalize and project the bleakest emotions, was simply overwhelming. Those trademark long breaths and subtle pauses had a vividness and authenticity that transcended mere hi-fi: Transient speed plus silence and harmonic bounteouness here equaled virtual reality.

Michael Fremer’s acute observation that the greatest components make time move slower was proved true and again as I listened to LPs through the dm10. Things did seem to literally slow down, as more delicate details floated effortlessly into place within the soundscape. Perhaps the best way to describe this phenomenon is that the Halcro, like the Boulder 2008, filled in spaces that lesser phono stages leave empty. The effect was like comparing bedsheets of 150 and 500 thread counts. There’s so much more substance in the finer weave—so many more spaces are filled. Thus it was with LPs through the dm10—the sonic weave was so much finer and more nuanced. And the imaging! Instrumental and vocal images of immense, convincing solidity flowed effortlessly and believably off of LP after LP.

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\(^3\) My memory of the FM Acoustics 222 is vivid, despite the nearly five years that have passed since I last heard it.
Steel Cage Death Match, or Four Front Ends Considered

During the period I was reviewing the Halcro dm10, VTL TL-75 Reference, and BAT VK-51SE preamplifiers, John Atkinson decided it would be enlightening to have me listen to these state-of-the-art contenders in comparison to the venerable Mark Levinson No.32 Reference (reviewed by Jonathan Scull in January 2000). How, we wondered, would the new boys stand up when compared not only with each other, but also with a long-term resident of Class A of “Recommended Components”? So, over the Thanksgiving holiday weekend, I did just that.

All four were auditioned over the course of four days. The solid-state units were warmed up in standby for a minimum of 48 hours prior to being auditioned; the tubed units were allowed one to two hours of warmup and stabilization time before I did any listening. All comparisons were made with the same system: my regular analog rig (see “Associated Equipment” sidebar), the Aesthetix Io Signature phono stage, Esoteric DV-50 universal digital player, Halcro dm58 amplifiers, and focal-JMlab Nova Utopia Be loudspeakers.

Acoustic Zen Silver Reference cables were used between the Aesthetix and the individual line stages and between line stages and amplifiers. Siltech SQ-110 Classic carried the Esoteric’s signal to the line stages, and LS-188 Classic speaker wire fed the Nova Utopia Be’s. Shunyata’s Hydra 8 was used as the power source for all front-end components. Shunyata’s Anaconda power cables supplied the juice to all of the preamplifiers, and an Anaconda Vx did the honors for the Esoteric. Siltech’s SPX-30 Classic AC cords were used on the dm58s.

In back-to-back listening sessions, the character of each preamp came into sharper focus. The VTL TL-75 Reference’s strongest suit remains its complete lack of discernible sonic character. It had a vanishingly minuscule sonic fingerprint and, as noted in my October 2003 review, does everything so well that it is beyond reasonable criticism. There’s nothing meaningful I can add to my earlier review comments.

The BAT VK-51SE sounded tubier, in the best way possible; through the ultra-neutral dm58s than it did through the tube amps I used when auditioning it for review a few months back (November 2003). Through the Halcro amps, the BAT was abundantly tactile and sensuous; "seductive," in an almost physical sense, accurately describes this combination. Bass power and precision were awesome, and the BAT’s enveloping, enfoldig soundstage, intensely saturated tonal colors, and incredibly delicate and tactile presentation of dynamic contrasts made it a hedonist’s delight.

The Halcro dm10 was dazzlingly, impossibly quiet, had majestic overall dynamic performance, and was, by a whisker, even more transparent than the VTL. But when taken strictly as a line stage, it was to my ears just enough leaner in overall character to make a difference I found important. Its precise definition of images and superb sense of space and context combined to create a striking illusion of reality, but there were times I wished that it were just a little more plush and giving. There’s no argument that the Levinson No.32 set a high standard for a number of years, but its age has begun to show. Comparatively speaking, the Levinson’s backgrounds were nearly as silent as the Halcro’s, and its user interface was the best of the four, which is high praise. But on the sonic report card it came up short. The No.32 sounded much darker than the tubed BAT, but without the latter’s ripeness, palpability, and flat-out sexiness. The Levinson couldn’t seem to generate as spacious a soundstage as the competition, and it consistently put me further away from the music, emotionally, than did the other three. It skated over the surfaces of music, albeit very stylishly, whereas the BAT, Halcro, and VTL dug into the music’s substance with appreciably more conviction.

Time has marched on; while the $15,950 Levinson No.32 is still an excellent line stage, the others offer a wider performance envelope. The BAT and VTL have appreciably lower (though still very substantial) prices—$9000 and $12,500, respectively—while the Halcro offers as fine a phono stage as I have ever heard as an integral part of the package.

I can feel one of JA’s steady, quiet stares directed at me and calling for some conclusions, so I must beg just a bit of forbearance and indulge in some Solomonic baby-splitting. Were I forced to decide which line stage I would opt for (under the threat of having my LP collection incinerated before my eyes should I fail to do so), I would fess up and go for the VTL. It’s the finest pure line stage I have heard, barely nipping the Halcro by a few thousandths of a second at the finish line of this Grand Prix. Its supreme neutrality makes it as nearly perfect a reviewer’s tool as exists in the audio world. As noted above, when taken strictly as a line stage, the Halcro sounds, to me, the tiniest bit cool, being ever-so-slightly leaner than the VTL. However, if I were forced to abandon having an outside phono stage, the story becomes somewhat different: As a full-function preamplifier, the Halcro dm10 has no competition and would be my first choice.
The Jayhawks’ cover of “Bad Time,” from *Tomorrow the Green Grass* (LP, American 40036-1), was gorgeous beyond words. That the Jayhawks could infuse this piece of Grand Funk fuzz with such soul and yearning is quite something by itself. That it sounded so heartstoppingly marvelous through the dm10 was something else altogether. Karen Grothberg’s swinging piano and passionate harmony vocals leaped into prominence. The warmth and intimacy of Stan Getz’s sax and Astrud Gilberto’s voice on *Getz/Gilberto* (LP, Verve V6-8545) sent tingles up the back of my neck. Chris Isaak’s “Wicked Game,” from *Heart Shaped World* (LP, Reprise 25837-1), was pure sensory overload: reverber trails seemed to last forever, so silken and delicate as to approach the erotic. Rickie Lee Jones’ fabulous remake of the Left Banke’s immortal “Walk Away Renée,” from *Girl At Her Volcano* (EP, Warner Bros. 23805-1B), was simply ravishing and totally heartbreaking.

Soundstaging was something near ideal. Each record presented a unique and individual picture of instruments and voices in space. The dm10 imparted no extra expansiveness to somewhat boxy-sounding jazz LPs engineered by Rudy Van Gelder, and it let large-scale music, such as Bruno Walter’s full-bodied take on Beethoven’s Symphony 9 (LP, Columbia Masterworks M2S 608), expand into large, unerringly delineated spaces.

Where, as I described above, the line stage has the skinniest scrim of cool, the dm10’s phono stage was clearly voiced toward a somewhat warmer sound—at least, that’s how it sounded to me. The most thought-provoking aspect of this is that the uncanny resolution that is one of the most defining characteristics of Halcro’s power amplifiers and the line stage has apparently not been affected by the choices that have been made regarding the phono stage. The combination of phono and line stages in the dm10 produces perhaps the most completely neutral reproduction of LPs that I have ever heard from any component or combination of components.

**Re-entry**

Coming back to earth after an experience such as that provided by the dm10 takes a little concentration. The oxygen gets very thin at the stratospheric levels of performance offered by this extraordinary preamplifier.

Conventional audio wisdom would dictate that all of Bruce Candy’s complex circuitry and relentless application of high technology in the service of sound reproduction would bleach the life, color, and humanity out of the music that comes through it. The dm10 does nothing of the sort. While the line-preamp section of the dm10 is perhaps a couple of ticks toward the lean, cool side of the spectrum, its performance, considered as a whole, has so much to recommend it that minor quibbles become, as is so often the case with components at this exalted level of performance, a matter of taste. But when the phono stage is taken into consideration, any minor reservations vanish. LPs played through the dm10 simply sounded more real than with any other phono stage I have heard, save for the astrally priced Boulder 2008. Even then, I’d have to hear the two stages back to back to determine if the Boulder is in fact superior to the Halcro.

Yes, at $15,990 the Halcro is expensive, but when comparable pairings of line and phono stages are considered, it emerges as, if not a bargain, then at least a fair deal. The closest overall competition that I have heard from multiple components (exempting the dizzyingly expensive Boulder 2008) is the Manley Labs Steelhead paired with the VTL TL-7.5 Reference line stage. Those two, plus a 1m length of, say, Acoustic Zen Silver Reference interconnect, totals $20,800—$5000 more than the Halcro.

But as good as the Steelhead is—and it’s superb—the dm10’s phono stage is even better. I know of no other full-function preamp that comes standard with such a stellar phono stage, though mbi and Burmester offer modular preamps that can be equipped with phono stages. I have heard neither of these worthies, but within the realm of my experience, the Halcro dm10 is not only a superb line stage, it stands alone as the everything-included-for-one-price preamplifier. Incredibly, Bruce Candy has done it again.
Pioneer SACD/DVD Player: $179!
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<td>Sanus AFA Rack</td>
<td>$180</td>
<td>Open design four-shelf 33&quot; rack.</td>
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<td>Sound Organisation</td>
<td>$350</td>
<td>Award-winning rack in solid-black with five adjustable shelves.</td>
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<tr>
<td>AudioQuest (AD) Type 4 speaker cable in &quot;no-frills&quot; packaging, 6 ft pre-reg.</td>
<td>$99.95</td>
<td>Kimber 4TC is very musical, accurate and refined.</td>
</tr>
<tr>
<td>Kimber 4TC</td>
<td>$59</td>
<td>Award-winning cable with five adjustable shelves.</td>
</tr>
<tr>
<td>Analysis Plus</td>
<td>$205</td>
<td>&quot;Halfway-Oval&quot; speaker cable; 8 ft pair $175; 10 ft $205.</td>
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<tr>
<td>Kimber B&amp;K</td>
<td>$237</td>
<td>50% pair $214; 10 ft $272; 12 ft $289.</td>
</tr>
<tr>
<td>AQ Granite twin-axial cable with &quot;no-frills&quot; termination, 6 ft pair, reg.</td>
<td>$234</td>
<td>Kimber Hero Interconnects</td>
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www.audioadvisor.com
A couple of months ago we roved about the Apple iPod and Creative Zen—two portable players that even an audiophile can love. Since then we’ve done some further testing of “digital” players, and we thought we’d share our thoughts with you.

**Apple iPod**

The iPod is great, and it sounds good, too—every bit as good as and better than the best sounding portable CD players available these days. This is clearly the most popular device in the category, and perfect for those who want a stylish and great sounding portable player. We think the iPod is a bit better than the other devices we tested in terms of sound quality.

**Creative Labs Zen Xtra**

The Creative Zen Xtra comes with a 60GB drive, making it the leader in storage capacity, and its battery can be swapped with spares, making it the player of choice for the international traveler who spends long hours in the air and/or the audiophile who wants to carry a huge music collection. (Those uncompressed tracks suck up hard drive space!)

**Dell DJ**

Somewhere between the iPod and Zen in physical size, the Dell DJ has a solid feel, good looks, and a great interface. We think this is a great all-around player for the music enthusiast who prefers to use Music-Match or Windows Media Player to manage their tunes.

**iRiver iHP 120**

If you’re an audio hardware geek (that’s us), the iRiver iHP-120 is the player to beat, providing both line-level and optical-digital inputs (and the ability to record from those inputs); corresponding outputs; support for more file types than other players; and a simple “use as a drive” interface. It’s also supported by most of the common “music managers.” We drool.

**Rio Karma**

The Rio Karma takes a shorter, squatter approach to size. If you are the young active sort that is out and about and must have your music with you at all times, then this may be the player for you. It sounds as good as the rest, its menu system is easy to use and complete; and it’s about the same size as a hackysack. The trade-off is the loss of some of the audio geek features of the iRiver.

**Digital Innovations Neuros**

Finally, the Neuros is an interesting machine. Depending on which “backpack” it’s wearing, it can be either a low-capacity flash player or a high-capacity hard drive player. The problem, in our opinion, is that it’s a bit too large in both cases. But it does have some nifty features, such as the ability to listen to, record, and label songs off of FM radio. And it does the reverse, as well—you can play your music on nearby FM radios through a built-in FM transmitter. This player is a cool gadget for the teen who might want to play music through a friend’s car stereo or boombox.

Come visit our website for more in-depth info on these fine players, and to learn how to turn them into killer, high-end portable systems with our new line of AirHead portable headphone amplifiers.
Most of us have at least some taste for gear that jumps out—
for audio components whose sonic and musical distinctions are easy
to hear from the start. In audio, unlike in the art of music itself, there's nothing
wrong with being obvious.

Then there are such products as the
grand-looking 890 amplifier ($4995)
from Esoteric Audio Research, which
had nothing of the obvious about it during
its stay in my home. Voices didn't
pop out. Groove noise didn't vanish.
Textures were neither smoothed-over
nor scuffed-up. Whites weren't whiter
and colors weren't brighter, and I had to
listen to it for weeks on end before it
sank in just how beautifully well the
890 played music. That's not so much
an indictment of the amp as it is of the
whole audio reviewing paradigm,
which, admittedly, is more about jumping
in the sack than mating for life.

The EAR 890 confounds reviewers
in another way: It's a straightforward
thing, and while its design and execution
are not without ingenuity, the EAR
890 lacks even such basics as hand-
rolled capacitors or exotic metallurgy.
Good God, this amp . . . has no story!

Description

The EAR 890 is, in designer Tim de
Paravicini's own words, a very conven-
tional tube amplifier. Each channel uses
its own 6AQ8 dual-triode as a differen-
tial pair, working in concert with anoth-
er dual-triode, the ubiquitous 12AX7.
The output section uses four tubes per
channel in a parallel push-pull configu-
raton: the relatively young KT90,
which de Paravicini describes as
Yugoslavia's answer to the classic KT88.
This beam tetrode, which shares some
physical characteristics with the EL509
power tube used in the earliest EAR
amps, is used as a tetrode, albeit not in
ultralinear mode.

The payoff is a hefty, hell-raising
70Wpc, operating in pure class-A.1 Al-
though de Paravicini says he strives for
extended tube life—described for our
purposes as a minimum of 10,000
hours—and thus maintains plate cur-
rent within the realm of sanity, you still
would not want to rest your hand on
the metalwork of an EAR 890 that's
been playing music for any amount of
time. As we say here in the Northeast
US, "Bastid git hot, dunmit?"

Other interesting details: Hobbyists
whose preamplifiers lack a balance con-
trol will be cheered by the presence of

---

Description: Stereo tubed power
amplifier with in/out level controls.
Tube complement: two 6AQ8, two
12AX7, eight KT90. Output power:
70Wpc into 8 (18.45dBW) or 16
ohms (21.45dBW). Power band-
width: 15Hz–40kHz at <3.0% THD.
Input impedance (measured at
1kHz): 55k ohms, unbalanced or bal-
anced. Input sensitivity: 1.0V.

Signal/Noise Ratio: 92dB (no ref.
level specified).
Dimensions: 16" W by 7" H by 16" D.
Weight: 60 lbs.
Serial number of unit reviewed:
013903.
Price: $4995. Approximate number
of dealers: 24.
Manufacturer: Esoteric Audio
Research/Yoshino Ltd., Coombe
Grove Farm, Ermine Street, Arrington,
Cambridgeshire SG8 0AL, England,
UK. Tel: (44) 1223-208-877. Web:
www.ear-yoshino.com. US distribu-
tor: EAR USA, Inc., 1087 East
Ridgewood Street, Long Beach, CA
90807. Tel: (562) 422-4747. Web:
'Best' isn't a word to be bandied about.

Let's talk a bit about the word itself, 'Best.'

One can of course 'give it their best' or 'be the be.'

Or better still, be 'the best of the best.'

But to be 'The Best Ever?' well,

One must be better than everything — Ever.

Now Ever is a word pertaining to time.

It's used in fairytales like 'Happily Ever Halcro'

And in magazines like 'Best Amplifier Ever'.

But what does that actually mean?


Nope. None of that matters. Here's the test:

Play Tchaikovsky, you're slammed.

Put on some Miles, you're cool.

Watch The L.O.T.R., you're epic.

With Music Lovers and Halcro wherever you go, you're there.
individual left and right channel-level controls, mounted on the rear panel. Nearby, a top-mounted switch allows the user to transform his or her EAR 890 into a 140Wpc monoblock; two-channel enthusiasts will then need to buy another 890, while monophiles can use a single one to intimidate the corner horn or old Quad ESL of their choice. Another switch toggles between balanced and unbalanced operation, the latter involving XLR sockets and an internal pair of custom-wound line transformers. The 890s output transformers are also de Paravicini’s own—he perfected the craft decades ago while working for Japan’s Luxman Corporation—and they present the user with separate taps for 8 and 16 ohm loudspeakers. And, finally, the auto-bias 890 requires little in the way of user intervention apart from working the On/Off switch, which is an orange plastic button. (But Tim: Are you sure that ivory, or perhaps even whalebone, wouldn’t sound better . . .?)

In this instance, our measurement task was relatively straightforward. The resistance range of the output transformer was determined by the choice of output transformer tap, the amplifier’s response was both flatter into the circuit-board standoffs on each channel’s output boards), the 890’s construction is logical, robust, and beautiful. The parts count is surprisingly low—especially true of the tubeless power supply, which Tim de P describes as “a boring, conventional voltage doubler”—and the whole of the amp comprises four near circuit boards: a small one for the balanced input trannies and associated bias; one large, central board for the driver section and power supply; and two output section boards. The smooth, heavy chassis has a finish of baked enam-

Measurements

I tested the EAR 890 using both its balanced and unbalanced inputs and its 8 and 16 ohm output transformer taps. The unbalanced voltage gain at 1kHz into 8 ohms ranged from a high 29.8dB (16 ohm tap) to 27.1dB (8 ohm tap), the balanced input offering 0.7dB lower gain than the unbalanced. Both inputs preserved absolute polarity; ie, they were noninverting. (The balanced input appears to be wired with pin 2 “hot.”) The input impedance at 1kHz was a useful high 55k ohms for both balanced and unbalanced inputs, and didn’t vary with the position of the volume-control pots; neither did it change with frequency at middle and low frequencies. However, whereas the unbalanced input impedance at 20kHz was a still-high 43k ohms, the balanced input impedance dropped to 10k ohms, which will roll off the top audio octave with preamps having a high source impedance.

It was hard to get an accurate estimate of the output impedance, as the open-circuit voltage fluctuated widely. (I estimate output impedance by looking at the rise in the amplifier’s output when a load of 8 or 4 ohms is replaced by the 100k ohms input impedance of my Audio Precision System One.) But by comparing the amplifier’s output voltage with a 4 ohm load with that at 8 ohms, it looked as if the EAR 890’s output impedance was around 1.5 ohms from its 16 ohm tap and 0.5 ohm from the 8 ohm tap. The change in the amplifier’s frequency response due to the Ohm’s Law interaction between its source impedance and the loadspeaker’s change in impedance with frequency is relatively mild, therefore. Fig.1 shows that, with our simulated loudspeaker load, there was just ±0.5dB response variation across the audioband from the 8 ohm tap, with just more than twice that from the 16 ohm tap (not shown).

The response curves in Fig.1 were taken using the balanced input: note the sharp rolloff above 20kHz, and that there is a slight peak before the rolloff with the higher impedance loads. Correlating with this peak, the small-signal squarewave showed a slight, well-damped overshoot (Fig.2). However, the degree and frequency of the ultrasonic rolloff also depended on the setting of the volume control. Fig.3 shows the response from the 8 ohm tap with the control set to 12.00; what was basically a flat response to 20kHz is now 3dB down at 25kHz. To my surprise, the unbalanced input behaved much better in this respect. As can be seen from Fig.4, while there was still some modification of the amplifier’s ultrasonic rolloff by the

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el, and the front of the amp is anchored with a thick brass faceplate, chrome-plated and polished to the proverbial mirror finish. Heavily chromed tranny covers with brass fixing nuts, another EAR calling card, complete the look.

Listening
At first I tried the 890 with my Lowther horns, replacing the Fi 2A3 Stereo amp I usually use. (My sample of the 890 already had several hundred hours on it, so I'm afraid I can't speak to the issue of break-in time as it affects this particular amp.) I was extremely impressed, and although it may sound simplen-minded to say so, the 890's performance made me think of nothing so much as a Fi amp with even more headroom, and a little more drive and richness in the bass. Musically, the performance was faultless. Symphonies were appropriately forceful but never lacking in poise — and, to an equal extent, never lacking in musical flow. This was not at all the choppy, mechanical sound for which some SET devotees criticize push-pull.

But for the most part, I put all 70Wpc to work using the EAR 890 with my mildly insensitive Quad ESL-989 loudspeakers (Stereophile, May 2003). The combination proved to be among the most sonically faultless and musically satisfying I've had in my home.

In the past, I've used the word unspectacular in a derogatory way; this time, I mean it nicely. The EAR 890 was an unspectacular amp that gave me easy access to musically important details. When I used it to play Clarence White's "Bury Me Beneath the Willow" (from the indispensable 33 Guitar Instrumentals CD, Sierra SZCD 26023-2), I heard clearly, for the first time, how the occasional

Measurements
and wider than via the balanced input. As a result, the unbalanced squarewave response didn't show any overshoot (fig.5). It looks as if the relatively small coupling transformers used to implement the 890's balanced input are not up to the superb standard set by Tim de Paravicini in his pro-audio products.

Channel separation (not shown) was better than 80dB at 1kHz, with the L–R crosstalk being about 5dB lower than the R–L. Though these figures decreased to 60dB and 66dB, respectively, at 10kHz, this is still good separation. The EAR 890's unweighted, wideband signal/noise ratio (ref. 1W into 8 ohms, 16 ohm tap, volume control at minimum setting) was only a moderate 75.4dB, due to the presence of some low-level 60Hz and 120Hz hum that I couldn't eliminate by experimenting with the grounding of my test setup.1 This did improve to a respectable 90.7dB when the measurement was A-weighted.

Ear specifies the 890 as having an output power of 70Wpc (18.45dBW). Figs.6 and 7 show how the 890's THD+noise percentage changes with output power, taken at 1kHz from the 16 ohm and 8 ohm output taps, respectively. It looks as if the 890 more than meets its specified power when the load impedance is the same as the nominal value of the output tap. The 16 ohm tap, for example, gives out 79.8W into 16 ohms (22dBW) at our usual 1% THD clipping point, while the 8 ohm tap gives 79W into 8 ohms (19dBW). These graphs also show that the EAR 890 offers excellent linearity below 10W from either output tap as long as the load impedance is relatively high. This can also be seen in fig.8, which shows how the small-signal THD+noise percentage varies with frequency with the 8 ohm output

1 The importer was aware of this low-level hum when the amplifier was on review. He noted that it was not typical and had developed somewhere in the amplifier's travel.

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“late” note attacks in this very early White recording weren’t mistakes at all, but rather deliberate attempts to push his cross-picking pattern off the tracks, so to speak, and to shift the upstroke—and thus the emphasis in each measure—in a way that made the tune more interesting. (Special note to guitar enthusiasts: Clarence White’s cross-picking pattern was virtually always down-down-up, down-down-up, not down-up-down, up-up-down, resulting in what I consider a more old-fashioned, mildly syncopated sound.)

The 890 also let me appreciate—if not for the first time, then certainly more easily than usual—Billie Holiday’s calm, understated delivery in the unsettling “Strange Fruit” (from the album of the same name, Commodore MVCJ 1921). I’m not sure why, but the 1930s-era recording, which merely sounds quaint through most gear, seemed “righter,” more serene, more inviting through this amp-speaker combination. Even the inevitable transfer noise, though still audible, imparted less distraction and fussiness to the listening experience.

Considering the Purcell music associated with the funeral of Queen Mary (I balk at a more specific title than that if only to avoid the ire of those who rightly observe that we don’t know for sure what was performed on that miserable day in 1695), the recording I most enjoy is the one made by John Eliot Gardiner in the late 1970s (LP, Erato STU 70971). At the end of this recording of the March, the percussionist plays a roll on a kettle-drum tuned to C, the sound of which is then left to fade naturally (i.e., it isn’t damped by the player). Bad amps—even enjoyable bad amps—get this all wrong, refusing to let go of the sound and making mith of it in the process.

Good amps give you a natural decay that dies away cleanly, letting you hear how the sound of a kettle-drum at stage left can both splash off the assortment of brass instruments at stage right and induce them to resonate sympathetically. By this standard, the EAR 890 proved itself a very good amp indeed.

And that was just the sound; musically, the 890 made for a very draining experience—but in the best possible way. The second sentence in the funeral service, “In the midst of life we are in death,” was uncommonly moving through this amp: The complex and often modern-sounding intervals carried by the four sections of the choir, in a continuous dynamic exchange with the organ, came through cleanly and clearly, leading me to wonder if the 890 produced much less than average in the way of both intermodulation and gross harmonic additives.

driving loads from 2 to 16 ohms. (The 16 ohm output graph, not shown, is broadly similar, with slightly higher levels of THD.) But note the increase in THD above 10kHz.

It is important to note that the absolute level of distortion is never as important as its spectrum. At low levels, the EAR’s distortion predominately comprises the subjectively innocuous second harmonic (fig.9).

But as the level rises (fig.10), especially at low frequencies (fig.11), the third and higher harmonics appear. The third harmonic lies at −52dB (0.2%) in this graph, which might be expected to slightly flatten the EAR’s bass reproduction. Note also that the low-level 120Hz hum can’t be seen in fig.11, though an intermodulation product at 701Hz (the difference between 120 and 50) can be seen on the upper slope of the 50Hz fundamental.

Finally, that increasing level of harmonic distortion seen in fig.8 will not be a factor at normal playback levels. But there will be some intermodulation at high levels of high frequencies:

---

John Atkinson

fig.9 EAR 890, 16 ohm tap, 1kHz waveform at 1W into 8 ohms (top), 0.053% THD+N; distortion and noise waveform with fundamental notched out (bottom, not to scale).

fig.10 EAR 890, 16 ohm tap, 1kHz waveform at 20W into 8 ohms (top), 0.33% THD+N; distortion and noise waveform with fundamental notched out (bottom, not to scale).

fig.11 EAR 890, 16 ohm tap, spectrum of 50Hz sinewave, DC–1kHz, at 30W into 8 ohms (linear frequency scale).

fig.12 EAR 890, 8 ohm tap, HF intermodulation spectrum, DC–24kHz, 19±20kHz at 35W into 4 ohms (linear frequency scale).

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While on the subject of good English music, I recommend an impressive recording of John Tavener’s recent _Ikam of Eros_, for vocal soloists, solo violin, orchestra, and choir (CD, Reference Recordings RR-102CD). Throughout the work, violinist Jorja Fleezanis plays an almost continuous violin obbligato, which she does with remarkable consistency and sweetness of tone—and which the combination of EAR 890 amplifier and Quad ESL-989 speakers played with both convincing flow and lack of coloration. In fact, the only departure from utter timbral neutrality I thought I heard through this amp was an occasional excess of richness in the upper bass—which I noticed, for instance, in the plucked cello notes of the famous second movement of Borodin’s String Quartet 2 (LP, Decca SXL 6036, in a fine Speakers Corner reissue). But the effect was so very slight that, taken in the context of the Quads’ own slight tendency toward excess down there, and the possibilities that room reactions might produce the same thing, I hesitate to even mention it.

I don’t mean to give short shrift to the 890’s considerable output power, which is, after all, among its grandest _raisons d’être_. All I can say—which is really something, I suppose—is that I never once heard the 890 get into any kind of trouble, even with the Quads in the largest of my listening rooms. This was as true of heldentenors as of Hoopie.

Based on my experiences with other, earlier EAR amplifiers, I expected the 890 to excel at stereo imaging—and wasn’t in the least disappointed. Using a string quartet recording to describe a home music system’s imaging capabilities has become a bit of a cliche, so I’m a little embarrassed to still be thinking of that Borodin LP, in my defense, however, while I can’t think of a single stereo recording that really suggests the spatial qualities I hear in a live concert setting, of any type of music and from any seat, good chamber-music recordings such as the above-mentioned probably come the closest. And, yes, the EAR 890 reproduced the sense of depth and performer placement that I presume is a part of the original recording with both uncanny precision and the same sense of “rightness” with which it approached the music itself. (I could also point to how well it separated the voice sections on that Purcell LP, even going so far as to suggest some curve to the choir’s risers.)

Previous EAR experiences might also have led me to expect less than the best from the 890 in terms of rhythm and pacing: it’s been a few years since I heard it, but I remember the similarly beautiful-sounding 534 being somewhat less than jaunty with upbeat music. For whatever reason—improved damping? the essential sonic differences between EL34 and KT90 tubes?—I heard no such troubles here.

In fact, when I used the EAR-Quad combination to listen to such songs as “Don’t Kill” and “A Little Concerned, That’s All,” from the great album _Tough Love_ by Hamell on Trial (Righteous Babe RBR033-D), I had just as much fun as with our “party” rig (Naim amps driving Lowther horns—whee!). And the opening bars of Martin Sieghart’s altogether superior Schmidt Fourth (CD, Chesky CD143) had a rhythmic insistence I don’t get even with Lowthers (although perhaps that’s because so much of it takes place in the bass registers). And when the tempo picked up very slightly, some 12 minutes later—just before the transition to the second movement and its solo cello line—the EAR-Quad combination got the idea across effectively. All in all, there was nothing soggy or slow in the way Tim De P’s amp played rhythmically demanding music.
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Finally, while most of my listening was done with my usual unbalanced interconnects (my own homemade solid-core silver), a sense of duty compelled me to try the 890 in balanced mode, too. (This despite the fact that Tim de Paravicini told me he believes "There are no sonic benefits that are peculiar to balanced [operation] that can't be accomplished with unbalanced." He went on to suggest that the 890 offers the choice simply to accommodate customers from a pro background, who are more comfortable working in a low-impedance connection context.) In particular, I tried a balanced cable set from DNM (see this month's "Listening," p.45), which is at least somewhat similar in construction and intent, if you will, to my reference.

Was there a difference? Actually, yes: While I heard no distinctions one way or the other in terms of flow or timbre or pitch or drama, I did in fact hear what I took to be a better, bigger sense of scale with the balanced cables. Sorry, Tim.

Back to where I started
As much as anyone else, I enjoy audio products whose strengths are plain and upfront and obvious—that is, as long as those strengths are the sorts of things that I care to hear. (Also as much as anyone else, I find it all too easy to fall into the trap of congratulating myself for hearing any difference at all, then buying whatever seems "freshest." Self-control is as hard to come by at my house as at yours.) I hear obvious products all the time, and I've even reviewed a few for Stereophile.

But as often as that happens, I tend not to covet such products. The extra few notes of bass, the heightened sense of presence, the scary-quiet groove...they're all nice, but after enjoying the luxury of having them in my home for 90 days out of my life, I can still do without them over the course of the days that remain.

Perhaps the most extraordinary thing about the EAR 890 was that, with the exception of the Quad pros that I used it to drive, this was the first new audio product in a very long time that I caught myself scheming to buy.

Then again, look what we're talking about here. A $5000 amp. Mama.

I have an idea. The EAR 890's only significant flaw is in its engraved top plate, which is screwed to the top of that enameled chassis, and on which are inscribed the words "Technology at it's best!" For one thing, the exclamation point is unnecessary, and its removal would lend the statement more in the way of, you'll pardon the expression, quiet power — which I imagine would appeal to Mr. de P in any event. Second, and more critical, is the inappropriately use of an apostrophe, denoting a contraction where there is none—a common mistake, and one that I saw many of my fellow teachers make with impunity when I taught sixth grade. (I think they should have got the hot lead themselves. But it is — or should I say it — a sadly common thing nonetheless.) So I hereby offer my services as an English major to Tim de Paravicini, and I would gladly forgo monetary pay in favor of...oh, I don't know, perhaps some sort of barter arrangement. I will wait to see what he offers in return. I'm not holding my breath.

An expensive amp, then, but one whose only flaw is grammatical. I suppose it's possible that the EAR 890, whose designer suggests that he could make an amplifier of precisely identical performance using transistors instead of tubes, sounds as good as it does because of its ability to step out of the way of good-sounding recordings. But if that's so, I can't help thinking it steps out of the way more gracef ully than most.

Associated Equipment

Analog sources: Linn LP12 turntable; Naim Armaggeddon power supply; Naim Aro tonearm; Rega Planar 3 turntable; Rega RB-300 tonearm; ZYX Airy S, Lyra Helikon Mono, Lyra Elys cartridges.


Preamplifiers: Fi, Audio Note M2 Balanced; Audio Note AN-S2, Tamura L2-D step-up transformers.

Power amplifier: Fi ZA3 Stereo.

Loudspeakers: Quad ESL-989, Lowther FM6As in Medallion horns.

Cables: Interconnect: Audio Note AN-Vx, DNM solid-core (balanced) homophones. Speaker: Nordost Valhalla, Audio Note AN-SPx. AC: JPS Labs Digital on Sony SACD player, all others stock.

Accessories: Mana stands under Linn turntable, Naim power supply, Sony SACD player, preamps; Rega wall shelf under Rega turntable; Loricraft PRC3 record-cleaner.

— Art Dudley

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VTL MB-450 Signature monoblock power amplifier

Since Chip Stern’s update on VTL’s second-generation MB-450 Signature back in October 2002, the amplifier has undergone further changes and improvements. It now features a completely redesigned input stage that incorporates advances made during the development of VTL’s mighty Siegfried monoblocks. The ‘450 now has a true balanced input stage, the asserted benefit being superior common-mode noise rejection without the use of an input coupling transformer. Despite these improvements, the MB-450’s price remains unchanged: $10,000/pair.

The new differential input stage consists of a high-gain 12AT7 tube to provide broad voltage swings, with B+ regulation and a constant-current source to maintain equal drive between the two phases even as the tube ages. See VTL main man Luke Manley, “This stage offers 60dB of common-mode rejection to external noise and other interference, and will accept also a single-ended signal on either phase, and will develop a signal on the opposite phase to drive the next stage.”

The input stage is capacitor-coupled to a 6350 tube, this comprising a differential-phase-splitter driver stage. The two halves of the tube form a longtailed pair with a constant current source, providing high voltage swing with equal drive to both phases of the push-pull output stage via series capacitors. The output stage remains unchanged — why mess with a good thing? Each amp still has eight 6550C power tetrodes and produces a very robust 450W into 8 ohms. Switch over to triode mode and you still get approximately 200W. As Rolls-Royce used to put it, power is “sufficient.”

Evaluative listening was done principally with the Hakro dm10 full-function preamplifier and VTL’s own TL-75 Reference line stage, fed by an Aesthetix Io Signature phono preamp. BAT’s VK-51 SE line stage also put in an appearance. Speakers were Focal-JMlab Nova Utopia Be’s. Classe’s superb Omega SACD/CD player decoded the digits, and vinyl was handled by my regular analog rig of SOTA Cosmos Series III turntable, Graham 2.2 tonearm, and Dynavector XV-1S cartridge. Signal wiring included Nordost Valhalla, Siltech Classic, and Acoustic Zen Silver Reference. AC was provided via Shunyata Anaconda, Anaconda VX, and Siltech SPX-30 cords, with Shunyata’s Hydra 8 conditioning and distributing the power. The MB-450s sat as amps usually do chez Bolin, on Grand Prix Audio Monaco stands.

I’ve said it before: There’s something really special about a great, massively powerful tube amplifier. The sensation of seemingly unlimited reserve power at any sane listening level let me relax totally into the music — the VTLs were not going to run out of gas no matter how hard I drove them. Dynamics were consistently first-class. The Minnesota Orchestra’s colossal dynamic swings in Rachmaninoff’s Symphonic Dances (CD, Reference RR-96CD) flustered them not a bit. Even during the most intense passages, the ‘450s never sounded even mildly stressed. Forceful music was always re-created with exceptional ease and refinement.

The MB-450’s sonic character was big and luxurious, but not overly “tubey” in the old-school sense of the term. There was the natural musical warmth that tubes do so well, but nothing in the amp’s character could ever be called “loose” or “unfocused.” Images were always cleanly delineated, but in a way that called to mind the traits of live music far more than it did those of hi-fi. Inner orchestral voices — such as those in the performance of Schumann’s Piano Concerto by pianist Byron Janis, Stanislaw Skrowaczewski, and the Minneapolis Symphony (LP, Mercury SR90385) — were revealed in precise place and proportion. Janis’ piano rang clean and true, every note differentiated cleanly and distinctly. With Emmylou Harris’ “I Ain’t Livin’ Long Like This,” from Spyboy (CD, Eminent EM 25001-2), Buddy Miller’s smokin’ guitar solo was superbly articulated and left me shaking my head in awe at his masterful playing. The ‘450 was suave and satiny at the top of the spectrum, with good extension, and detail retrieval that was definitely better than average.

The VTLs midrange showed excellent transparency and detail. Timbre was what one might reasonably expect from an outstanding tube amp; the MB-450 was harmonically generous and true to both voices and instruments. Bass control can be a concern when tube amps are paired with such large drivers as the ported 13” units in the Nova Utopia Be’s. The VTLs put those high-tech, low-mass woofers in a bear hug — definition was excellent, and...
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extension left no room for complaint. Daryl Johnson’s rumbling bass on Wrecking Ball on Harris’ “Where Will I Be?” set things abuzz in my room. That potent bass was cleanly articulated and showed convincing bloom.

Soundstaging lived fully up to expectations: capacious, cleanly delineated, and enveloping. With the VTLs, I always felt myself a part of the environment created by the recording, not a disconnected observer of an event happening elsewhere. Backgrounds were as quiet as the best I’ve heard from tubes, namely the Lamm ML1.1, and that is very quiet indeed.

Switching over to triode mode brought a degree of voluptuous roundness to the VTL’s presentation and moved the musicians an inch or two closer to me. There was also a jolt or two of extra sparkle in the lower treble — perhaps a touch of romanticizing — and top-treble detail retrieval, while still very good, was not quite as evenly illuminated as in pentode mode. Bass became a little loosey-goosey at times in triode as well, but not so much that it could ever be described as “mushy” or “ill-defined.” While triode mode was excellent with orchestral music, its particular strengths perfectly suited small-scale music. Simon Nicol’s remarkable vocal on “The Deserter,” from Fairport Convention’s XXXIV (UK CD, Woodworm WRC038), fuses moral passion and muted anger in quite an astounding way, and Rickie Lee Jones’ take on “Walk Away Rene,” from Girl At Her Volcano (LP, Warner Bros. 23805-1B), was even more heartbreaking than the Left Banke’s immortal original. Triodes do, it seems, bring an extra level of emotional directness.

Ultimately, triode giveth extra warmth and touchability and taketh away some ultimate bass definition and dynamic slam, as well as the last few squillionths of resolution that pentodes provide — a fair trade. That both are available at the flip of a switch (after being sure to turn the MB-450 off) gives the MB-450 owner a mighty appealing set of choices.

The VTL MB-450 Signature offers a boatload of performance and power in a thoroughly engineered, straightforward, solidly built package. It will drive any speaker I can think of in pentode mode, and will drive nearly any speaker in triode mode. Its sound is open, inviting, and truthful in revealing both the artifacts of recordings and the essences of music. It is one very fine amplifier that should be heard by anyone shopping at this end of the market.
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**Stereophile, April 2004**
**The Subdudes: Miracle Mule**


Performance: ★★★★☆

Sonic: ★☆½

Reunions are touchy things. Sometimes it’s almost instantly obvious — no names here, but you know who they are — that it would have been better had a band stayed apart and allowed history to remember them fondly.

In the case of the Subdudes — a talented band that, after five albums, broke up in 1997 — a reunion was a decidedly good thing. Dedicated to making heady, original music that touched most of the essential poles of American music — gospel, blues, rock ’n’ roll, R&B — the Subdudes found themselves in the same predicament as other between-the-cracks bands: their music was too complicated for most radio and too hard for retail to rack, and so became all but invisible to the average consumer.

As is the case with most successful reunions, it’s clear that the time that founders Tommy Malone, Steve Amedee, and John Magnie spent apart has recharged their batteries and given them something fresh to say. From the opening bars of the gospel brunch opener, “Morning Glory,” it’s clear that their confidence is back, along with new flames of devotion to gospel and the band’s New Orleans roots.

A little history for the uninitiated: Born in the famous New Orleans club Tipitina’s in 1987, the Subdudes included two sons of Louisiana, guitarist-vocalist Tommy Malone and percussionist-vocalist Steve Amedee, as well as keyboardist John Magnie, originally from Colorado, who’d by then moved to NOLA. The band built a local following before relocating to Ft. Collins, Colorado and signing with High Street Records, who released five albums: The Subdudes (1989), Lucky (1991), Animamita (1994), Primitive Streak (1996), and the swan song, Live at Last (1997).

After their split, Malone and bassist Johnny Ray Allen returned to New Orleans, where they formed the group Tiny Town. Magnie, Amedee, and bassist-percussionist Tim Cook stayed in Colorado and formed Three Twins. In February 2002, Magnie sat in with another assemblage, the Tommy Malone Band (which included bassist-guitarist Jimmy Messa), during a gig in Denver, and the Subdudes reunion was born. The current lineup of Malone, Amedee, and Magnie is completed by Cook and Messa.

One part folk-rock, one part soul revival, one part New Orleans jam band, and a healthy dollop of gospel fervor, the ‘Dudes’ roots-rock eclecticism has always been agreeable, approachable, and full of a heartfelt honesty that comes through on nearly every song. Although it’s also a comeback album, Miracle Mule is to the Subdudes catalog what The Neighborhood is to Los Lobos: a low-key, well-rounded, consistent collection of Americana filtered through the sensibilities of their own particular style of Vieux Carré meets Rocky Mountain High. To further the comparison, the Subdudes’ three vocalists often sound uncannily like Los Lobos’ Cesar Rosas and the great David Hidalgo.

In fact, much of the band’s magic depends on the interplay and harmonies of the three founders’ strong voices — nothing here is too loud or too flashy. There’s no full-on drum kit, and electric guitars are kept turned down very low or are absent altogether. Sometime Bob Dylan guitarist Freddy Koella produced Miracle Mule; the sound, while often warm and immediate, has moments where the instrumental mix gets fuzzy and the dynamic range falls below what it should be.

In “Brightest Star,” which undoubtedly turns into a jam when played live, accordion, violin, acoustic guitars, and the band’s percussion trademark of tambourine and cymbal are mixed into the kind of solid, mid-tempo, white-gospel rock groove that could be the closest thing the Dudes have to a unique style.

Miracle Mule hits its stride with tracks like “If Wishing Made It So,” a bittersweet tune melding elements of SoCal rock, the three vocalists in harmony, and an electric guitar solo, to form another soul revival.

A Subdude trademark has always been sing-along, almost doo-wop—sweet choruses, such as those in “I’m Angry” (“That I still love you.”) and “Known to Touch Me”—perhaps the album’s most soaring, optimistic tune. Blending accordion with the three voices, “Known to Touch Me” gives all three founders a chance to testify.

Everything the Subdudes do is flecked through with the band’s New Orleans roots, specifically New Orleans R&B, which is the dominate flavor of such tunes as “Oh Baby,” in which a little Professor Longhair/James Booker—like pie-arnie makes a welcome appearance.

Most of all, the Subdudes’ return has again given us the kind of earnest, unfeigned sincerity that’s been in ever shorter supply in the seven years they’ve been apart.

— Robert Baird
the silver-toned instrument set within an intimate, clarion-clear sonorous picture. Close listening will pick up the odd noise from the instrument’s mechanics, but it’s hardly bothersome.

Staier delivers some of the most compellingly stylish performances of solo Mozart ever drawn from a period keyboard. He plays with the imagination, character, and authority of the best practitioners of the modern grand piano, producing real drama within the inherent dynamic and timbral strictures of the 18th-century instrument. He creates his own intensely articulated world with the sublime Fantasy in c, K.475, and the Sonata in c, K.457. But beware—if you were to listen to, say, kindred spirit Alfred Brendel play these pieces directly after Staier, you would be floored by the deep bass and rich overtones that Brendel’s modern instrument affords him.

Where Staier is without peer is in the very rarely heard Suite in C, K.399, an essay in Baroque dance forms that Mozart wrote under the influence of Handel and Bach. The composer left the Suite unfinished, so Staier completed the last few bars of the Sarabande and added the later Gigue in G, K.574, as a glittering finale. Staier also offers the Sonata in E-flat, K.282 (the only Mozart piano sonata to open with an Adagio, and a wistfully resigned one), as well as the Ten Variations in G, K.455, after a Singespiel melody by Gluck. Mozart set these variations down on paper after improvising them at a concert that Gluck may have attended. Playing with as much abandon as Classical poise allows, Staier dispatches Mozart’s occasionally discordant ingenuities as if he were flinging precious coins into a fountain.

Bradley Bambard

Alessandro Scarlatti

Griselda

Dorothea Röschmann, soprano; Lawrence Zazzo, countertenor; Veronica Cangemi, soprano; Bernarda Fink, mezzo-soprano; Silvia Tro Santafé, mezzo-soprano; Kobie van Rensburg, tenor; Akademie für Alte Musik Berlin; René Jacobs


Performance *****

Sonics *****

In his final opera, Alessandro Scarlatti offers some of the most tuneful and inventive music you’ll hear in any Baroque music drama. Notably, it’s all original—he borrowed nothing, either from his own or anyone else’s work. This is especially important because it not only shows the 61-year-old composer’s determined effort to explicate the libretto’s often twisted psychological themes and disturbing character motivations, but also stands as a true summation of Scarlatti’s musical-dramatic thinking just three years before his death. The story of Griselda and the Sicilian king Gualtiero (originally recorded in Boccaccio’s Decameron) had already been set many times by various composers, including Albinoni and Vivaldi. But on evidence of these superb performances, Scarlatti’s formidable score—three hours of music—is fully worthy of its revival in such a grand and carefully prepared production.

The story involves King Gualtiero’s marriage to a shepherdess, Griselda, and his subsequent castigation by his people for marrying “beneath his station.” There follows an elaborate and cruel scheme by Gualtiero to prove to everyone Griselda’s worthiness. Without telling her why, he subjects her to a series of trials, including taking one of her children away and informing her and his subjects that he’s had the child killed. He also makes plans to marry another woman, to whom he promises Griselda as a slave. The last straw comes when he orders Griselda to marry someone else. She refuses, thus proving beyond all doubt her loyalty to Gualtiero and her marriage vows. Gualtiero takes her back, and all ends happily.

Soprano Dorothea Röschmann is simply a phenomenal singer. Ever since her earliest appearances on disc (including a wonderful program of Vivaldi and Pergolesi on Dorian from 1993), she seems to have made all the right decisions in forging a solid opera career, using her voice intelligently and allowing it to mature unforced, to its present lustrous tone. Even when you can’t see her, she’s a riveting performer, and with age and experience she gets only better. Scarlatti wrote a lot of terrific music for her to


classical

MOZART

Music for Fortepiano

Fantasy in c, K.475; Gigue in G, K.574; Sonata in c, K.457; Sonata in E-flat, K.282; Suite in C, K.399; Ten Variations in G, K.455

Andreas Staier, fortepiano


Performance *****

Sonics *****1/2

One of the world’s foremost performers on period keyboards is Andreas Staier, whose extensive discography for Teldec ranges from Byrd’s works for virginal harpsichord to late Schubert sonatas on a 19th-century piano. With this recording, available on both CD and SACD/CD, the German musician makes his Harmonia Mundi debut with a set of famous and far less familiar Mozart pieces, played on a modern copy of a ca 1785 Walther fortepiano, the model favored by the composer.

At their best—with an ideal combination of instrument, performer, and sound—recordings of period keyboards are uniquely evocative, offering detail and atmosphere redolent of a composition’s original time and place. At their worst, recordings of harpsichords and fortepianos can be difficult to take in extended listening sessions, the tinny or clattery sound inhibiting the musical experience.

Not only does the 48-year-old Staier boast a rare mix of scholarly and expressive talents; he works with Europe’s top class of engineers. Those who know the best productions of Flemish fortepiano specialist Jos van Immerseel with producer Wolf Erichson for Sony Classical may miss the amber-toned glow that they achieved. Yet, working in Cologne’s Stolberger Hall, Staier’s team yields its own appealingly lucid sound,
singing, and she always leaves us waiting for her next appearance. She's partnered by an equally engaging Gualtieri—Lawrence Zazzo, whose gorgeous countertenor easily makes us forget other world-class names who've come to countertenor prominence in recent years. His Handelian-style aria "Che bella tirannia" is a gem.

Likewise, it would be difficult to find a more dramatically electrifying (yet perfectly in character) or vocally commanding performance than that of Bernarda Fink in her Act I aria "Non vi vorrei conoscere," proof (if any more were necessary) that this singer is one of today's treasures. Tenor Kobie van Rensburg also proves equal to the other stellar cast members, doing a fine job with his two arias. Veronica Cangemi has a lovely legato, impeccable intonation that's never sacrificed to affectation, an eminently listenable, pure, round tone, and clear, ringing top notes. Silvia Tro Santafé is convincing as the scheming, totally-in-love Ottone.

All of this is supported by as fine an orchestra as we could hope for, led with edge-of-the-seat pacing and an obvious point of view that deftly underscores the music's allegorical devices and allows its effects on the characterizations to be clearly expressed and felt.

In sum, it's hard to find anything wrong here. These singers and players, aided by full-bodied sound (produced in a Berlin studio) that provides desirable clarity while allowing the voices to fully bloom, prove ardent and compelling advocates for a unique and richly rewarding score that deserves more attention than it originally received from its single performance at the Teatro Capranica in Rome in 1721.

--David Vernier

**rock/pop**

**THE ALLMAN BROTHERS BAND**

*Live at the Atlanta International Pop Festival*


Sonics ****

It's difficult to explain the kind of dramatic impact the Allman Brothers Band had on American rock, but the group managed to combine the discursive musical trajectory of the San Francisco bands with the classically inspired bombast of the British Invasion groups at a time when the two styles were thought to be at total odds with each other. The sound was big and powerful, but with its two-drummer rhythm section it rolled with undertones, too, and in the person of Duane Allman, the Brothers had a Guitar God who could stand toe to toe with Eric Clapton, et al. And Gregg Allman's rich blues vocals and authoritative Hammond B3 organ gave the group a soulful stamp that only musicians with roots in the American South could ever achieve.

Given the amount of archived Brothers material already available, it's surprising that this near-perfect example of the original band at the height of its abilities has remained unreleased until now (except for two tracks on Epic's *The First Great Rock Festivals of the Seventies* package and one on *Myology*). The band, fresh from cutting its second album and still surging madly toward its apogee, played twice at the Atlanta International Pop Festival, but even with a lot of duplicated songs, the sets are strikingly different. The first, from July 3, 1970, includes versions of "Trouble No More," "Hoochie Coochie Man," and "Dreams" (with a great bass solo—Berry Oakley at his best). The set-closing "Mountain Jam" is cut off in mid-flight by a rain delay and, though resumed after the break, never quite reaches its peak. But on July 5 the band came roaring back for more with a fierce "Statesboro Blues," an even greater "Whipping Post" after the soulful interlude of "Stony Monday," and nearly half an hour of "Mountain Jam" with guest guitarist Johnny Winter.

--John Swenson

**Record Reviews**

**DAVID BOWIE**

*Reality*


Pop music's master chameleon returns in his latest studio incarnation. The follow-up to last year's understated masterpiece, *Heathen*, *Reality* once again pairs Bowie with longtime producer-collaborator-friend Tony Visconti. However, unlike its sublime and introspective predecessor (which recalled the intensity of Bowie's experimental masterpieces *Low* and *Heroes*), *Reality* is a disjointed affair best described as "Bowie revisiting Bowie"—or, as he states in the title track, "Now I'm back from where I started from." Instead of breaking any new ground, *Reality* offers an overview of Bowie's past musical triumphs in 11 new songs that sound like outtakes from his more memorable recordings, from *Young Americans* to *Thin White Duke*. With the exception of a few stellar moments, such as the haunting ballad "The Loneliest Guy," "Looking for Water," and "She'll Drive the Big Car" (the latter two recall the classic * Lodger—Scary Monsters* era), and the refreshingly jazz-inflected "Bring Me the Disco King," *Reality* is a tepid endeavor draped in expertly yet slightly overproduced stadium-rock anthems.

--Craig Roseberry

**DAVID BOWIE**

*Sound+Vision*


David Bowie has revisited his back catalog at a furious pace in recent years. In 1989, the world welcomed the much-anticipated expanded editions of his classic recordings, from 1969's *Space Oddity* epic to 1980's new wave opus *Scary Monsters*, and culminating in the stunning *Sound+Vision* boxed set of three CDs. These were then followed by reissues of more commercial and largely lackluster collections (*Let's Dance*, *Tonight*, and *Never Let Me Down*), and the two-CD set *The Singles: 1969—1993*. Collectively, however, these seminal and influential recordings, reissued on Rykodisc, were a testament to Bowie's influential, and prolific past, and definitive documents of the creative intensi-
ty that highlighted the late 1960s through the early '80s in rock and pop music. From the '90s to the present, Bowie has also become a consummate businessman who owns and controls the masters and publishing of his entire musical catalog.

In those same years, however, Bowie has also sharpened his most precious commodity—his catalog—by releasing an onslaught of often unnecessary re-releases that have paled in comparison to those first Rykodisc reissues. In the past year alone we've seen 30th-anniversary editions of Ziggy Stardust and Aladdin Sane, as well as reissues of the Ziggy Stardust film soundtrack and (on DVD) film, and yet another two-CD/DVD Best Of collection. There are only so many times you can package and repackage the same material before people lose interest. Even the most avid Bowie fans can't easily digest such overkill. Enough is enough.

Now, Virgin/EMI has repackaged the once essential Sound+Vision collection, expanding it to four CDs that include 23 additional tracks of singles, B-sides, and rare material from the Bad EP, Let's Dance, Tonight, Tin Machine I & II, Black Tie White Noise, and the Buddha of Suburbia soundtrack. (Listeners are spared tracks from the dreadful Never Let Me Down album, except for the mediocre single "Time Will Crawl.") The additional tracks seem to undermine the brilliance and importance of the overall set, cluttering it with more indulgent recent material that has already appeared on other reissues and is not as timeless as some of Bowie's classic works. Thankfully, the 23 new tracks are relegated to disc 4 and are easily ignored.

Instead, you can focus on the original three-disc Sound+Vision, which remains a dazzling chronicle of the modern rock icon's vast oeuvre and is punctuated with thrilling experimental permutations.

—Craig Roseberry

JAY McSHANN

Goin' to Kansas City

Performance ****

I'll never forget watching a frail Jay McShann carefully tread his way to the piano on stage at a Kansas City park in 1997. He needed some help getting there, but as soon as he was on the bench, a startling transformation took place. Hootie McShann sat up straight, smiled, hit the keys, and for the next hour, band and audience were swept back into the sweaty confines of a KC speakeasy on East 18th Street in the late 1920s.

That's how I feel listening to Goin' to Kansas City. Producer Holger Petersen has re-created the collaborative, jam-session atmosphere in which McShann has thrived for more than 65 years. As on their two other collaborations, Peterson's production informs McShann in much the way Rick Rubin's steered Johnny Cash through his last decade.

Just as important to the overall sound is Duke Robillard, a vet of McShann's three Stony Plain discs and whose band has backed Hootie's live appearances the last few years, including that Kansas City date. Adding swingin' bassist Milt Able and drummer Tommy Ruskin, both familiar KC swing vets, to nail together the framework that allows McShann to do his thang. Nobody steps on anybody's toes here.

It's as easygoing a session as any McShann performance. Hootie offers up a couple verses of boogie-woogie "Kansas City," and a few songs later, Johnnie Johnson joins him for some two-piano improvisation on the Leiber-Stoller standard. Maria Muldaur, fresh from her own album of Peggy Lee tunes, stops by for some playful cooing on Jay's "Confessin' the Blues."

But I think I still like McShann solo, as he is on "The Fish Fry Boogie," "When I Grow Too Old to Dream," and "Just for You." You can feel the history with his every touch on the ivories. Peterson fills out the disc with a fun, 20-minute chat with McShann sitting at his piano.

Goin' to Kansas City isn't just a good record by an 87-year-old bandleader who dates back to the early days of swing. It's the essence of the form. "You better hurry and get me pretty baby, pretty soon I'm going to be too old," McShann croons at one point. But he's not there yet.

—Leland Rucker

NEW ORLEANS FUNK

Three From The Big Easy

THE METERS: Fiyo at the Fillmore

Performance ****

Sonic ***

PAPA GROWS FUNK: Shakin'

Performance ****

Sonic ***

BRIAN STOLTZ: East of Rampart Street

Performance ****

Sonic ***

You will not hear a better funk group than the Meters. Art Neville on keyboards, George Porter Jr. on bass, David Russell Batiste Jr. on drums, and Brian Stoltz on guitar play this style as if they invented it, and as far as Neville and Porter are concerned, they did. Fiyo at the Fillmore catches this magnificent quartet at the peak of its improvisational prowess, playing before its ultra-hyped San Francisco fans. When Neville is on game, the group concedes nothing to its original lineup, and Neville is clearly in the driver's seat here, freezing the funk with wincing accents and power-drive Hammond B3 runs.

The most astonishing thing about this band is the interplay between Porter and Batiste. Porter was the young guy in the original Meters, but he's since evolved into one of the world's greatest bassists and the undisputed King of Funk. He and Batiste—hands down, the greatest New Orleans drummer of his generation—have a rhythmic simpatico that is the stuff of legend.

Stoltz completes this brilliant package with the broad range of tones and attacks needed for this outfit's principal soloist. "Too Funky" is the brilliant instrumental update of this timeless sound, but the set is also packed with such Meters standbys as "People Say," "Cissy Strut," and "Fiyo on the Bayou."

Papa Grows Funk is the fresh new face of this classic sound. The band's second album, Shakin', is an improvement on the Meters formula if only for the fact that it gives the multidimensional Batiste a vehicle for his songwriting as well as his innovative drum patterns, and gives him two distinctly different bassists, Marc Pero and Peter V, to interact with. Batiste's "Soul Second Line," augmented by a brass band led by Troy "Trombone Shorty" Andrews, has already become a fan favorite in live performances, and is destined to become one of the signature songs of the New Orleans canon.
Keyboardsinger John Gros, the band's nominal leader, is a shrewd and diligent student of the full range of New Orleans piano and organ styles, and on such memorable songs as “House of Love” (co-written with his brother Ward, who was called up with the National Guard and is currently in Iraq) and “Rat a Tang Tang,” Gros stamps himself as a new master of New Orleans songwriting. The superlative Japanese guitarist June Yamagishi brings his crystalline tone and Curtis Mayfield-level rhythmic chops perfectly into the mix, but the biggest development from the first album is in the playing of saxophonist Jason Mingledorff, who can play alto like David Sanborne and tenor like Lee Allen.

Papa Grows Funk showed it could melt the paint off the walls with its first album, Doin It, but Shakin presents them as a compositional force to be reckoned with. Once you've listened to this album a few times, you'll never forget it. This band is going places.

On his solo album, East of Rampant Street, Brian Stoltz is backed by an all-star lineup from both of these great groups: Gros and Peter V from PGF, and his own bandmates, Porter and Art Neville, who delivers super-funky vocals on “Jungle Funk” and “Funky Forever.” Ivan Neville chips in on keyboards, and Doug Belote and Eddie Perret lay down the drum tracks, with Crescent City sensation Irene Sage adding soulful vocal accompaniment. Stoltz shows the full range of his musicianship on this varied album, singing and playing guitar, bass, various percussion instruments, and programming drum loops. —John Swenson

**DUKE ROBILLARD**

*Exalted Lover*


Performance 4/4

Sonics 4/4

Sideman extraordinaire. Master of swing. He can finesse any guitar style. His production touches are never anything but impeccable. His backup players are beyond reproach. But on *Exalted Lover*, his new release, it's Robillard's songwriting—he wrote eight of the 10 tracks—that gets the spotlight.

Robillard tries on a lot of different styles here. The uptempo R&B “Down Home Country Girl” and “Deep Inside,” a knock-down Texas blues, offer the best examples of his guitar wizardry—not that there are poor ones anywhere. And Robillard can rock with the best of them. His guitar nods to Chuck Berry on “Real Live Wire” are amusing, and “How Long Has It Been” is a solid Albert Collins tribute, with Iceman alum Debbie Davies trading solos with Robillard.

But I prefer Robillard's jazzier side. He's at his very best on “I'll Never Be Free,” a languorous duet with Pam Tillis that puts me in the mind of the old standard “Making Whoopee.” The title track, another heavy-breathing jazz tune, works around an inspired trombone riff that wouldn't sound out of place in the middle of a Dr. John set. And Robillard serves up plenty of New Orleans rhythms and stylings, especially on the soulful “Tore Up” and a revival of the old chestnut “Travelin Mood.”

There isn't as much of the swing element as on some past discs, but Robillard's “Double X Daddy” goes a long way to satisfying that itch.

—Leland Rucker

**STEREOLAB & AIR**

*Margerine Eclipse & Talkie Walkie*

**STEREOLAB: Margerine Eclipse**

Performance 4*/3/4*

Sonics 4/4

**AIR: Talkie Walkie**


Performance 4*/3/4*

Sonics 4/4

Maye you always thought the Rat Pack could've used a character named Frenchy. Maybe it was Serge Gainsbourg, not Dean Martin, who epitomized cocktail-swilling cool and effortless masculine charm—not Marlboro Reds and whiskey, but Gauloises Blondes and wine. If that sounds like your orbit, well then, your space-age bachelor pad has been thoroughly modernized in the last half-century. Sonic designers Stereolab and Air will happily acquaint you with the new furniture and demonstrate
which remote control operates the mood lighting. The rest is up to you.

Stereolab practically invented the very groovy, very Euro intersection between electronica, krautrock, lounge, and indie rock. Others have trafficked here (Thievery Corporation, Broadcast), but this corner is where Stereolab (whose principals are multi-instrumentalist Tim Gane and his wife, vocalist Laetitia Sadier) built its house. Problem is, after nine albums and 12 years, passersby don’t peek through the windows as much as they used to. Although Stereolab is now settled somewhere behind the avant-garde, it’s no insult to note that every song on Mysterine Eclipse can be described in pretty much the same way: a vintage organ pulse, emotionally detached singing (often in French), a throbbing, go-go bass line, and some 1960s sci-fi sound effects that even Giorgio Moroder thought sounded too chimtry.

Recorded in dual-mono, Mysterine Eclipse isn’t afraid to sound loose, and is at its best when the guitars add a little fuzz to the analog trance, as on “Bop Scotch.” Elsewhere, “Sudden Stars” bubbles into a locked groove suitable for strobe-light illumination, and the closer, “Dear Marge,” has a tiki-bar feel. The CD’s untitled hidden track is not to be overlooked—it’s a midnight-hour tune that evokes Anita Ward’s 1970s disco hit “Ring My Bell.” Stereolab may be past its prime (check out 1996’s Emperor Tomato Ketchup for the group’s best work), but Mysterine Eclipse is its most engaging effort in years.

In terms of making France’s retro, kitschy quirks palatable to American ears, Stereolab paved the way for Air. The Paris-based duo of Jean-Benoît Dunckel and Nicolas Godin has branded its hipster cachet since 1998’s Moon Safari (and its dance-pop single, “Sexy Boy”) announced the metrosexual era in song. Air orchestrates pocket symphonies from their iMacs, fusing synth pop and prog rock to create the sound of machines making out. There is no warmth to the acoustic guitars that are strummed alongside the electronic keyboards, and each computer-generated blip or beat is issued cold and crisp.

Yet Talkie Walkie is a relatively easy pill to swallow, and is Air’s return—after 2001’s overwrought 10,000 Hz Legend and the macabre soundtrack score for Sofia Coppola’s The Virgin Suicides—to simpler, more accessible music. Unfortunately, the album mostly sounds dumbed-down: lame whistling barely carries “Alpha Beta Gaga,” the verse and chorus of “Surfin’ on a Rocket” repeat ad nauseam; and the been-around-the-world lyrics of “Universal Traveler” are lazy in any language.

Air’s music is sung in English; Talkie Walkie features Dunckel and Godin’s stiff vocals, which are often electronically processed for maximum robotic effect. Some tracks show ambition: “Mike Mills,” which sounds like a Bach piano fugue with a subtle downtempo beat; and “Alone in Kyoto,” an inventive instrumental from the Lost in Translation soundtrack. But most of Talkie Walkie slides by on flagrant gimmicks, such as the new-age “bzzzzzzzzzz” effect that vaguely conjures voices carried on the wind. (It sounds like Enya.) Whereas Stereolab makes yesterday’s music sound like tomorrow, Air—capable of a brighter future—has done the exact opposite.

—Matthew J. Fritch
Two of the most urgently innovative albums of new music to appear in late 2003 were recorded in 1965 and 1969. The music is new because it has not been released until now. *The Last from Lennie's* is a rough-and-tumble live recording from a forgotten gig at a long-defunct jazz club (Lennie's-On-The-Turnpike, near Boston) by a short-lived quartet. *Passing Ships* is a studio date containing seven unusual, erudite, sophisticated compositions for nonet. Joe Farrell is the dominant sideman on both. He was a master of at least five reed instruments whose stature becomes easier to appreciate with each year since his death, in 1986. Both albums are long-lost classics that we almost never heard.

Jaki Byard had a 50-year career in jazz (he died in 1999) and worked with some of the major trailblazers of his era, such as Charlie Mingus and Eric Dolphy. He was a wildly creative and utterly distinctive pianist, a free mix of elements as disparate in time and tone as James P. Johnson, Thelonious Monk, and Cecil Taylor. Yet he never received the recognition he deserved. The group he took into Lennie's on April 15, 1965 would have been one of the great small groups of the '60s had it stayed together.

A CD of material from this gig was released in 1992 (*Live, Prestige PCD-24121-2*), and it contains some of Byard's best recorded work. *The Last from Lennie's* is the remaining music from that night, and it is more uneven. But Joe Farrell never cut loose on record with more inspired abandon than here. From the opening track, "Twelve," he plays furious, swooping, hammering solos that threaten to fly apart yet always cohere into musical meaning.

As for Jaki Byard, he does not so much comp for Farrell as violently lash and challenge and rain arguments upon him. Byard's own solos are impulsive, fearless maelstroms, idioms both ancient and modern lurching and careening in subline jumbles. His statements on the two takes of "Dolphy" are as free of inherited assumptions, as ensnared in the moment, as a Jackson Pollock canvas.

If *The Last from Lennie's* is a Pollock, Andrew Hill's *Passing Ships*, in the intricate, disciplined details of its through-composed designs, is a Seurat. Hill, who is now 66, is still very active as player, composer, bandleader, and educator, and his career has enjoyed a resurgence in the new millennium. *Passing Ships* reveals that his highly individual, intellectually rigorous style of composition and arrangement was fully formed by 1969. Joe Farrell's presence is powerful here, although in Hill's civilized company he observes more of the social graces, and his individual contributions are organic to Hill's overall ensemble purposes.

Hill manipulates his nonet's resources of line and color (one reed, two trumpets, three low brass, plus rhythm) into patterns that are geometric in their precision. Counterlines, extensions, modulated figures, and fresh juxtapositions create ever-evolving horn backgrounds for the soloists. The soloists thrive. Besides Farrell, Woody Shaw (24 at the time) and Dizzy Reece (always underrated) on trumpet, and Julian Priester on trombone, respond brilliantly to Hill's counterintuitive stimulations. Check out Shaw on "The Brown Queen" and Priester on "Noon Tide."

"Sideways" (a title that could apply to every Hill composition) illustrates how carefully Hill puts his pieces together, and yet how much spontaneity he provokes. Its jagged 12-bar melody is only the first layer. Beneath, shifting substrata provide depth of field for strong statements from Farrell and Hill and Reece.

These two albums are unforeseen windfalls, much better late than never.

—— Thomas Conrad
“To surpass what he’s accomplished with the 2.2, he’ll have to start with a blank piece of paper.” Michael Fremer in Stereophile, July 2002 vol 25/#7

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Hovland Radia
Editor:
Paul Bolin's review of the Radia (March 2004) was welcomed by us not just for his proclamation that the amplifier is "much more than its pretty face" and "was a delight to listen to," but because it expressed clearly what all Hovland components are about — enjoying music.

It was gratifying that he found the Radia "consistently excellent at letting each bit of a musical event happen in its own time and in its own space while remaining solidly knit into a whole presentation." One of our main goals is designing components that do not have a "sound" of their own at all. If we accomplish that, then we feel the listener's attention is focused where it should be — on the recorded performance. This is perhaps most specifically noted by Paul when he said, "The Radia let each cable and line stage exhibit the characteristics I was familiar with, but to a somewhat higher degree than usual," and "the Radia reflected the recording and the equipment that it was paired with." While this may seem a rather modest observation, for us it is very satisfying to have a seasoned listener such as Paul make note of a quality that is really quite difficult to achieve.

With regard to your suggestion that readers should be sure to audition a new-production Radia with the intrachannel power-supply grounding scheme: We can assure readers that this is easy to do, since this change was implemented very early in production and all of our US dealers' demonstration units are fully current.

We are pleased to note that the Radia has been exceptionally successful for us overseas this past year, and we have now been able to increase production for the US. We hope the greater availability of the Radia will allow more music lovers here to audition the Radia when assembling their own ultimate systems.

We wish to thank Paul Bolin and John Atkinson for the considerable time they spent evaluating Hovland Company's Radia. While we respect the notable preamps Paul had available to use while enjoying our amplifier, we also know that pairing it with its natural mate, our new HP-200 remote-controlled preamplifier, would be quite enlightening.

Aerial Model 20T
Editor:
We would like to thank Michael Fremer, John Atkinson, and Stereophile for the excellent review of the Aerial Model 20T. We especially appreciate the time and energy required to produce such a thorough evaluation.

The Model 20T's design goal was to significantly surpass the less expensive Model 10T by providing a slightly larger yet still compact, dynamic, and very wide-band system with exceptional transparency, detail resolution, spatial accuracy, and neutrality. We tried to eliminate colorations of any kind, tonal differences between drivers, and dynamically related performance changes. It was also important to us to use higher-quality drivers and cabinets than are normal for today in the over-$20,000/pair range.

In addition to providing high performance, we work very hard on all Aerial products to maintain consistently high levels of design, quality, and reliability that are at least the equal of much more expensive products. These factors are difficult to evaluate in any test, usually revealing themselves over time in terms of extended life, consistent performance, and increased owner satisfaction.

Regarding the bass level in Michael Fremer's room, we were surprised ourselves: during setup by the lean midbass in his basement room, even though the deep bass was good. Because his room dimensions are normal and smaller rooms normally tend toward warm bass, we suspect his midbass dip is due to an absorptive boundary, such as a springy ceiling or wall. Unfortunately, a room dip centered at 67Hz will make any system with correctly integrated bass, whether extended like the 20T's or not, sound lean. This is borne out by Michael's similar experience with the excellent Rockport Antares. Alternately, a
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speaker with a mid bass boost at the same
frequency will fare better in this room, but
may become bouncy in normal rooms.
The most important point is that a normal
room of similar dimensions will probably
not have such a mid bass dip; one should
reasonably expect correct bass reproduction
in such a room size with the 20T.

One of the design challenges of the
20T was to provide the quick bass attack
and decay speeds necessary to integrate
seamlessly with the rest of the speaker. We
wanted an uncommon level of trans-
parency from top to bottom as well. Early
on, we noted that simply removing the all-
too-common bass overlap or blur pres-
ent in most speakers can produce dry bass.
David Marshall and I spent a lot of time
with the enclosure, driver, and network
designs to produce quick, extended bass
(28Hz, -3dB in most rooms) with solid
bass mass and tremendous dynamics. We
feel this kind of bass — bass with exten-
sion, speed, and weight — will be a revel-
ation to most people. This kind of bass
sounds right on string bass, pipe organ,
and drums, and is rare and thrilling.

We clearly demonstrated this kind of
bass in our suite at the Mirage during the
Consumer Electronics Show. We appreci-
ate Michael’s comments on his listening
experience there; that “the bottom end
compressed chest and room and was in-
pressively articulate.” This is what you
should expect from the 20T. (Also, go to
www.stereophile.com/news/011004ces—
index.html to read Wes Phillips’ comments
on the 20T)

Finally, note that the three-position bass
switch operates as follows: 11 o’clock is
flat (this is our recommendation, and what
we used at CES), 12 o’clock produces a
mild boost between 40 and 50Hz, and 1
o’clock produces a larger boost in the
same limited frequency band. The bass
bump seen in John’s measurements is par-
tially due to this switch being at the 12
 o’clock position.

The three-position treble switch is flat
at 11 o’clock, with increasing boosts above
3.5kHz at 12 and 1 o’clock. In a room
with bass suckouts, the flat, 11 o’clock
position is safest, but the 12 o’clock posi-
tion is certainly delightful in a good room
with good material. The 1 o’clock position
is there primarily for very large rooms or
rooms with lots of absorption.

We are pleased that Michael enjoyed
the performance of the Model 20T so
much. We hope that other listeners will
have the opportunity to experience for
themselves the performance capabilities
that Michael enjoyed so much in the
Model 20T.

Michael Kelly
President, Aerial Acoustics

Infinity Primus 150

Editor:
We’d like to thank Stereophile and Robert J.
Reina for the thorough and incisive review of the Infinity Primus 150 loudspeaker. We are extremely gratified that the sonic excellence of the Primus 150 was recognized by your publication, as were our efforts to bring true high-end sound quality to an attractive price point and a wider range of listeners.

At Infinity, our design mandate has always been to utilize innovative driver materials and technologies to create loudspeakers that offer outstanding fidelity and, even more important, are musically and emotionally involving. The exclusive Metal Matrix Diaphragm, or MMD, driver technology utilized in all Primus Series loudspeakers exemplifies this design philosophy. In fact, the MMD drivers employed in all Primus Series loudspeakers are directly derived from the patented Ceramic Metal Matrix Diaphragm (CMMD) technology employed in our flagship Prelude MTS loudspeakers and the recently introduced, high-performance Beta Series.

We work very hard to ensure that sonic excellence is the hallmark of every Infinity loudspeaker and system, and at every price range. The real proof, however, is in the listening, and we encourage Stereophile readers to audition one of our loudspeakers at their earliest convenience. We're confident that, as Robert Reina did, they'll like what they hear.

Eli Harary
VP, Sales & Marketing, Infinity Systems

EAR 890

Editor:
While I might have welcomed a frothing-at-the-mouth rave about the EAR 890 amplifier, I knew not to expect that kind of review from Art Dudley. Instead, he did a masterful job of characterizing the amplifier, for which I am grateful. I interpret his account of the 890's performance to mean that it did exactly what it was supposed to do, which was to impose as little of its own character on the proceedings as possible—or, as he puts it, "to step out of the way of good-sounding recordings." If this is what it means to describe the amplifier as "conventional" (to paraphrase Art paraphrasing Tim de Paravicini), I am happy to accept the term. The best, or at least most succinct, definition of the job of an amplifier is that it should act as a straight wire with gain. That is the convention, or it should be, but only an audio designer knows just how difficult that job can be.

I don't mean to suggest that Tim was being disingenuous or self-deprecating when he described the 890 as conventional. Those who know him know that he is capable of neither. Let's just chalk it up to a typically British form of dry understatement, which to him is very much a habit. He may speak of the process as merely doing the thing properly, but I know that the amount of care and attention Tim puts into the design and execution of an amplifier is extraordinary. Getting everything right involves—among a myriad of other things—the meticulous layout of circuit boards and the design of custom transformers for every application. The result, in the 890, is an amplifier "whose only apparent flaw is grammatical," again in Dudley's words.

As for the grammatical flaw ("Technology At It's Best" is printed on the top plate, rather than "Technology At Its Best")—sorry, Art. I, too, am a former English major, and pointed out the error long ago, with as much success as you're likely to have. Nice try, though.

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It was the 40th anniversary of the Beatles' arrival in America. It was also the morning of Grammy Awards day, and I was watching an even larger exercise in creative reality: President George W. Bush on Meet the Press. After mouching fantasies about tax cuts creating jobs, phantom WMDs causing a war, and how guns and butter are possible for all Americans—not to mention how he really did do his time in the Air Force Reserves—Bush began the selling of his $2.4 trillion budget. When the New York Times suggested the next day that the President establish "a closer relationship with reality and a more intense commitment to the truth," I echoed a hearty 'Amen!'

That evening I watched the Grammy Awards, in all their orgasmic, ego-soaked, nonsensical glory. While the President's re-election strategy will require your money, your life, or, in the case of the fourth estate, a seemingly endless reserve of apathy, the Grammies' unreality is more of the "so-outlandish-you-have-to-laugh" variety.

Take, for instance, Justin Timberlake saying again that the whole-brass-seen-'round-the-world incident during the Super Bowl was "unintentional." C'mon, kid, what are you—backin' to be President? I noticed that, every time the cameras turned toward the Mouseketeer's mom, she was falling out of her dress. It starts at the top: The President has made arrogance, unrealiti, and being a C student things to be proud of. Simple mathematics ain't gon' stand in the way of his budget, no suh.

The Grammies usually do end up bestowing a few awards on musicians who actually deserve them. This year, the two given the late Warren Zevon were richly deserved. Ditto the awards won by Jeff Beck, Foo Fighters, White Stripes (who gave the night's second-best performance), June Carter Cash, Café Tacuba, Wayne Shorter, the Louvin Brothers, and Pierre Boulez. This was also a record year for posthumous awards—Zevon, both June and Johnny Cash, George Harrison—proving that even the dead can whip the Beyonces, Christinas, and Justins of this world.

The night's best performance was the opening number, in which a very much alive Prince not only looked great, but showed again what real talent—as opposed to whatever it is that Timberlake, Pink, and Dave Matthews have—looks and sounds like. Prince's appearance was doubly sweet because it represented the music business, now desperate for talent to showcase, eating a heapin' helping of crow. Not so long ago, Prince was seen as a pariah in the biz for his ambitions to be free of its machinations. Tonight he saved the show. Let's face it: the scintillating Beatles "tribute" (more like satori) by Vince Gill, Sting, and Dave Matthews, the last two singing parts pitched too high for their meager voices, wasn't going to keep many people watching.

Checking e-mail after the show, I found out that singer-songwriter Ryan Adams had careened off a stage in Europe and broke his wrist, forcing postponement of the remainder of his current tour. Suddenly it occurred to me that maybe I'd been too hard on alternative realities. Adams, an artist whose talent (if not his pugilistic skills) I admire, has recently attempted to establish a new reality for himself and his music. Since late last year, Adams has released three albums: one full-length, Rock'n'Roll (spelled backward on the cover), and two EPs, Love Is Hell, Pt. 1 and Pt. 2.

"The two parts of Love Is Hell are the halves of the record Adams made in New York and New Orleans as the follow-up to his much-praised, much-despised 2001 set, Gold. When his label, Lost Highways, balked at releasing Love Is Hell—too soft and sad, according to the buzz—he went back to the studio and, in a few weeks, cut Rock'n'Roll."

Love Is Hell represents the Adams we know from Whiskeytown, Heartbreaker, and Gold: bittersweet, intricately crafted, self-obsessed folk-rock, in this case played by a band of all-star oldsters that includes Greg Leisz (guitars), Hutch Hutchinson (bass), and—surprise!—Marianne Faithfull on background vocals, on "English Girls Approximately" (Pt. 2). Beautiful, broken-hearted songs like "I See Monsters" and "Hotel Chelsea Nights" (Pt. 2) abound, enlivened only briefly by the rare upbeat number, such as the title tune or "This House Is Not for Sale" (both on Pt. 1). "The Shadowlands" (Pt. 1) is one of Adams' finest songs.

Having stubbed his toe with his label over Love Is Hell, Adams decided to rev it up and cut another, much different record. Reportedly inspired by a producer who advised him to stop talking about James Taylor and Hank Williams and start acting his age—i.e., speak to the same crowd as contemporaries Jack White (The White Stripes) and Julian Casablancas (The Strokes), Adams radically changed his approach.

Gone is the singer-songwriter of Gold. In his place on Rock'n'Roll is a composite of contemporary influences. On "Anybody Wanna Take Me Home," Adams is clearly channeling The Smiths; on "So Alive," the album's hookiest single, it's U2. The obvious homages to the Stones and Springsteen which filled Gold have morphed into rough-edged guitar bashing in tunes like "1974." A friend may have said it best when he opined that Rock'n'Roll appealed to his "juvenile" side; his smash's crash testosterone-rock side.

Unlike the Grammies, which are based on unreality, or the Prez, who shows no signs of smelling the coffee or any other tangible aroma, Adams' adventure into another reality, which is interesting enough in itself, will end. Volume and anger are fun, for a record, but the reality in which Adams can be brilliant—the reality of genuine songcraft, in which Adams will take his place in the singer-songwriter pantheon—will return. Adams is too clever not to see his future.
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