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new ideas often spark great concepts.
What's Real?

I couldn't believe it. Something was off. I had just spent more than 200 hours playing my system 24 hours a day in order to break in some new Bybee devices in my speakers. During the same period I'd switched power regenerators, installed better-grade electrical outlets, and finally replaced my dedicated line's fuse box with a circuit breaker. I'd even installed audiophile-grade fuses in my tube amp and DAC.

The break-in period sorely tested the patience of my spouse, who detests the sight of all the silvery cables that hold the system together. Sound carries everywhere in our wood-and-plaster home, and we leave doors open so that our beloved companion, Baci Brown of canine renown, can access his water. I can't tell you how many nights we fell asleep listening to the break-in sounds of the Dalai Lama chant "Om," and various New Age artists play music that some would call somnolent.

Finally, the time had come for me to assess the cumulative improvements all those upgrades had wrought. I picked a disc that had just won a Grammy, baritone Thomas Quasthoff's SACD/CD of Bach cantatas. I've heard Quasthoff live on several occasions, always seated in a fine acoustic location, and have reveled in the glories of his voice.

What I heard now dismayed me no end. Quasthoff sounded terribly labored, negotiating scales and range breaks as though he could barely hold his instrument together. Was he undergoing some sort of vocal crisis, I wondered? Had he received the Grammy as much for his inspiring triumph over physical deformities as for his singing?

Curiously, the barely indulgent spouse, whose mind was mainly focused on the imminent broadcast of Sex in the City reruns, rebuffed my dismay and declared the system up to snuff. We agreed that Quasthoff sounded awful, but several tenor and soprano vocalists sounded pretty damn good. Diana Damrau, for example, still made heavenly sounds singing "Et incarnatus est," from Mozart's Mass in C Minor.

I remained unconvinced, however, that my system had been born again. Everything had a glassy, syrupy, somewhat monotone "tubey" sound. There was plenty of bass, but it seemed disconnected from the highs. Had I installed something incorrectly, or were all the changes we'd made to speakers and electrical system finally revealing the sonic colorations of an amp I had previously praised for its neutrality?

When I checked to see if the changes to the electrical system had radically altered the biases of my amp's tubes, I discovered that three of the amp's fuses and two power tubes had blown. I was powering the Jadis DA-7 Luxe with only nine of its dozen power tubes. No wonder the sound was off.

MOST PEOPLE, I REALIZE, NO LONGER HAVE LIVE SOUND, LET ALONE GOOD LIVE SOUND, AS A REFERENCE.

In retrospect, I realize that, had I not approached my system with a solid grounding in the sound of live, unamplified music, I might not have detected the problems. I might have proceeded as do an increasing number of Americans: clueless that what passes for music is nothing more than an aggregation of pitch, rhythm, noise, and distortion.

But what is the sound of live, unamplified music? We often speak of it as an absolute, when in fact it varies from hall to hall and from row to row. I recently moved from Row L to Row F of San Francisco's acoustically deadened Herbst Theater because I could not hear the distinctive color the Capucon brothers were drawing from their violin and cello. The program notes declared that one was playing a priceless Guarnieri violin, but for all the color I could hear back in Row L, it might have been a fiddle he'd found on the street. Only when I'd halved the distance between me and the Capuccons could I discern what makes this duo's sound so special.

What if Row L of Herbst had been my reference for live, unamplified sound? What a colorless system I might have assembled.

Most people, I realize, no longer have live sound, let alone good live sound, as a reference. They're accustomed to hearing music in their cars, over iPod earbuds and boom boxes, and at amplified concerts. Sometimes, nothing they listen to has correct timbre or balance. When I consider telling my neighbors in the 'hood that the huge speakers rattling their cars and vibrating the foundations of my house are not the real thing, I remind myself that they're simply reproducing their reference for how amplified music should sound when a testosterone-addled male hiss Play.

How to establish a reference? Months before West African kora master Mamadou Diabate's Behmanka was nominated for a Grammy, I went to hear him perform at Berkeley's Ashkenaz Music & Dance Community Center. The amplified sound of Diabate's 21-string, long-necked wooden harp was booming like crazy, with hardly any evidence of the higher-pitched vibrations that had so thrilled me when I listened to Behmanka at home.

Diabate's kora sounded so unnatural that I retreated to where the soundman was enthroned against the back wall, to ask him what was wrong. It was only then that I discovered that most of the bass that was muddying the sound was dying off before it reached his ears. As is the case in halls where the mixing board is located under the balcony, so much of the sonic spectrum had been truncated by the time it reached the sound tech that he hadn't a clue what the audience was hearing elsewhere in the hall.

"Is it real, or is it Memorex?" the commercial used to say. A better question might be, Whose reality and what reality are we talking about?

As someone weaned on the sound of tenor Enrico Caruso on acoustic 78s, I can never forget my surprise at discovering that, on modern recordings, orchestral "accompaniment" can express as much emotion and meaning as the voice that rides over it. Had I not had that reality check, I might never have understood what makes opera so grand.

Thankfully, I've listened to enough great music in enough fine halls to recognize the real thing in the same way that an Antarctic penguin can shuffle through many thousands of birds to detect the distinctive cry of its mate. I've stood right next to a fine cello, a Guarneri violin, numerous concert grands, and Joan Baez—I stood 10 feet from Janis Joplin when she gave a spontaneous free concert. I know the sounds artists and instruments are capable of producing at their best. I've accumulated a reservoir of sonic memories and beauty that holds me in good stead. Without it, I'd be listening blind. Which just may be what helps many of those who peddle distinctly what makes opera so grand.

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FEATURES

63 Andrew Hill
No longer under the radar, one of jazz' most influential pianists finds deserved acclaim. Dan Ouellette has the story.

73 Belle & Sebastian
A little precious, a little twee, no problem: Jazz Cohen thinks B&S rocks!

EQUIPMENT REPORTS

80 Focal-JMlab Elektra 1007Be loudspeaker
(John Atkinson)

90 Snell LCR7 XL & LCR7 loudspeakers
(John Atkinson)

103 Audio Physic Scorpio loudspeaker
(Michael Fremer)

113 Rega Apollo CD player
(Art Dudley)

121 Moscode 401HR power amplifier
(Wes Phillips)

131 DK Design VS.1 Reference Mk.III integrated amplifier
(Robert J. Reina)

145 EICO HF-81 vintage integrated amplifier
(Peter Breuninger)

FOLLOW-UP

127 Musical Fidelity Nu-Vista 300 power amplifier
(Wes Phillips)

COLUMNS

3 As We See It
This month Jason Victor Serinus writes about the reality of musical listening.

11 Letters
This month readers write in with humor, about music, against testing, for extended listening, and in search of a belief.

15 Industry Update
High-end audio news including dealer-promoted seminars, plus: RoHS regulations, notes from the inaugural meeting of the Music & Media Forum, Bristol's Sound & Vision show, news of the Minnesota and Philharmonia Baroque Orchestras. Want to know more? Go to the "News Desk" at www.stereophile.com for up-to-the-minute info.

25 Sam's Space
Sam Tellig listens to the Cayin HA-1A headphone amp, black Memorex CD-Rs, and the Copy Cruiser and CoolCopy CD-R burners.

33 Analog Corner
Michael Fremer on the Halcyonics Micro isolation system and the Acrolink isolation transformers, the Marantz TT-15S1 turntable, ATTY's RadioShack SPL meter, Apple's iPod Hi-Fi, and a possible cure for scratched vinyl.

41 Listening
Art Dudley takes us on a Quad-yJing journey!

49 The Fifth Element
John Marks listens to David Stanhope with the Audionet SAM Version 2 amplifier through the Audio Physic Tempo IV loudspeaker.

163 Record Reviews
June's "Recording of the Month" is Mercenary by the inimitable Mac Rebennack, Dr. John, who is the feature performer this month at Primedia's Home Entertainment 2006 in Los Angeles, California. In classical this month, we have Boccherini and new titles from the label owned by the London Philharmonic Orchestra. In rock/pop we have reviews of new records from Mudhoney and Matthew Sweet & Susanna Hoffs as well as the new Richard Thompson boxed set. In jazz, a Red Garland reissue takes center stage.

174 Manufacturers' Comments
This month Acrolink, Halcyonics, Rega, and Moscode write in about our reviews of their products.

178 Aural Robert

INFORMATION

176 Audio Mart
171 Manufacturers' Showcase
175 Dealers' Showcase
173 Advertiser Index
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Humor?
Editor:
Like Art Dudley (in his “My Favorite Tweaks of 2005” column, March 2006), I would like to relate a personal favorite tweak for the Ayre Myrtle Blocks. While sitting on the john, taking my morning constitutional, I put a block under the heel of each foot, then press the third one to the inside of my wrist. (The area where you might take your pulse works best for me.) I find that my focus and bottom end improve. If I am suffering from constipation—say, after reading Michael Fremer’s comments on the $4250 Dynavector DRT XV-15 moving-coil cartridge (March, p31)—I will place the third block against my temple and tilt my head back 30°. Try it and see if it doesn’t make a difference for you. It will cost you only $15 to find out.

Barry Pruner
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Humor
Editor:
I think you should warn readers not to be drinking anything when reading Art Dudley’s “Listening” columns. I found that fact out for myself—way too funny. 

Peter Truc
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Music, music, music
Editor:
For many months now, the number of record reviews published in Stereophile has dropped substantially. While I am a fan of good equipment, what point is a great system without music to play it on? It’s so easy to find out about the latest Martha Carey album—you can hardly avoid it. But there are many acts out there (say, Amy Rigby or the Psychodots) that your readers would enjoy. I don’t know if this reduction comes about in response to any research, but I would prefer to learn more about new music than I do.

David L. Wyatt, Jr.
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John, John, John
Editor:
John, John, John, when are you going to finally admit that your measurements do little to describe how good a product sounds? Art Dudley keenly described the Yamamoto A-08 amplifier in March, only to have you imply that it isn’t really a good amplifier because it tested poorly. Maybe you should take some advice from your own staff: “measurements have little or no correlation with sound quality,” wrote Sam Tellig in April (“San’s Space,” p25). You are doing a disservice to countless would-be buyers who may say, “Oh no, Atkinson says it tests poorly, must be bad.” I have lived with many products that you have found to test very well, but they don’t hold a candle in terms of musicality to my 300B SET monos, which I’m sure you would find test horribly.

Please cut us a break, JA—you’re testing the wrong things! Now I might have given you a little more respect had you taken the time to listen to the Yamamoto yourself, but I saw nothing to that effect in the review. Look, tube amps still scare a lot of potential buyers, especially newcomers to the hobby, let alone the SET variety. We need to encourage people, not turn them away.

Take a listen, John. Be nice. We’re all on the same side, are we not?

Jon Conarton
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Thanks for the Show
Editor:
Thanks, Stereophile, for printing entertaining reviews and articles. I have read reviews in many other high-end rags over the years, and though they do good jobs of reviewing components, they do not make their writing entertaining for the reader. In audio terms, their reviews are analytical. Though I enjoy all of the Stereophile reviewers, I often laugh out loud when reading Sam Tellig, Michael Fremer, or Wes Phillips. (Thanks for bringing Wes back.) I think their work is not only very well written, but very clever as well.

Sorry, Mr. Atkinson, you are the only member of your review team who is not particularly clever. You’re a bit stoic. If you want to keep up, you need to perk it up.

Thanks for not using “blind testing” in order to review equipment. This is an old argument that rears its ugly head every couple of years and will never be settled. Based on my 30-plus years of experience with all types of audio equipment, you need to be able to spend a lot of time with a component to understand its sonic characteristics. Also, I really like and appreciate the insight that extended listening gives a reviewer.

Examples can be found in every review published in Stereophile. A prime example was Wes Phillips informing us that the Thiel CS2.4 loudspeaker needs at least 200 hours of break-in time to sound its best [November 2005]. Anyone contemplating purchasing the CS2.4 will at least make the purchase understanding that they will require an extensive break-in period. There is no question that blind testing is more objective, but it is the subjective aspects of your reviews that I find helpful when making a purchase or setting up a piece of equipment.

Finally, thanks for providing the Home Entertainment Shows. They are the best. I have attended almost every one of the HE Shows since they began. These Shows truly set Stereophile apart from the rest of the high-end periodicals.

Randy Peck
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Home Entertainment 2006 takes place in Los Angeles, June 1–4. See the ad on p.168 for details.

—John Atkinson

Good show
Editor:
Just read “Strawberry Fields: Auditory Objects & Bad Science” in the April Stereophile (p3) and wanted to send a “Well said,” I particularly enjoyed John Atkinson’s response to the question of the difference(s) between wine tasting and food tasting, where blind testing is common, and audio testing: “It comes down to the fact that in all those fields, what is being tested is the direct effect of the stimulus. With audio, you must test the stimulus indirectly, through its effect on music.”

I’ve known for a long time that blind tests don’t work for audio, but had not seen the explanation articulated as well before. Good show!

Barry Diament
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The power of thinking
Editor:
In your April “As We See It,” you again bring up the issue of blind testing. I believe Malcolm Gladwell’s book Blink: The Power of Thinking Without Thinking has some apropos points about blind testing. In essence, there is a difference between preference and being able to analyze exactly what is being preferred, and why. All of us can do
The power of testing

Editor:

In the April issue (p.3), John Atkinson again took on all proponents of blind testing, insisting that this type of test becomes an "interfering variable" because the people involved in the test are no longer "listening as they normally do." The April issue in particular has several of your reviewers directly comparing, in quite some detail, the sounds produced by two components. In fact, this is what they normally do.

I must assume that, if your reviewers can describe the quite different characters of two amplifiers after careful sighted listening, they would be able to arrive at the same descriptions if given the same amount of time with the lights out in a darkened room. If they could not, why not? If one of those reviewers were blind, would he or she not have been able to hear the same differences?

I am not one who insists on blind testing, because I can agree that the challenge is explicit in such a test could indeed change the way in which one listens and thus introduce the "interfering variable." I wonder, then, if it is indeed that challenge itself—of coming up with the right answer, whatever that means—that lies at the heart of this interminable dispute?

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Amusing

Editor:

I've been a Stereophile subscriber since the digest days, and I've been reading the Objectivist/Subjectivist debate since then. It is a very amusing debate, as J.D. Svo- bo-da writes in April's "Letters" [p.13]. Amus- ing, in that it's gone on for so very, very, very long!

Do you think the Objectivists will ever realize that we Subjectivists just don't care what they think? Blind testing is the last thing I want to do when it comes time to sit down and listen to some music. Listening to music has nothing to do with what we hear and everything to do with how it makes us feel. I feel good looking at my stereo while the tunes wash over me, and yes, I'm a little smug, knowing that the choices I've made in equipment sound so good—choices based on sound, looks, price, and whether or not the dealer let me take the component home to listen to it in my system.

The last thing I want is to be "tested" while listening. Life is too short! You Objectivists can get your own rag (this won't get past John either, Sam).

Mark Dziubalakiewicz
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I want to believe

Editor:

As the caption said on the UFO poster over Fox Mulder's desk in the much-missed The X Files, "I want to believe." I want to believe that being a music lover and audiophile—this great hobby I have enjoyed for better than three decades—remains a worthwhile pursuit that has a future. I want to believe that the down-load phenomenon won't lead to widespread acceptance of an inferior software standard that will be even worse than "Red Book" CDs and render impotent everything else downstream in the reproduction chain. I want to believe that high-end retailers will adapt and attract new customers. I want to believe that many of the great entrepreneur-run audio manufacturers will live on to produce more terrific gear, and that talented newcomers will follow the same dream. But, unlike alien-chaser Mulder, I'm only getting more skeptical as time goes on.

It's always been fun to read reviews in Stereophile, then run out and track the gear down for audition. But now, that buzz of excitement and anticipation all too often drains away into frustration. Those great products may seem to exist, passing in and out of your offices in NYC, but it's getting harder and harder to find them in the real world. You might as well be looking for Sasquatch.

A decade ago, within 15 miles of my house in Tulsa, Oklahoma, I could visit three or four small retailers and audition gear by Mark Levinson, Krell, KEF, Vandersteen, Apogee, and NAD. Today, you're doing good in these parts to get much beyond Sony, Klipsch, and Bose. Increasingly, I've tried to satisfy my audio cravings during vacations and business travel. Thanks to a very tolerant wife, I often break off during trips and seek out the local high-end dealers. But even this strategy is failing. Many of the specialty audio shops I've visited and bought from have closed, transitioned to home-theater/custom installation, or shrunk dramatically and are hanging on by a thread.

I called speaker manufacturer Sound Lab a few months ago, for instance, to find a dealer to visit during an upcoming trip to Arizona. Nothing there, I was told.

How about Texas? Nada. San Diego? Nope. Kansas? Sorry. In fact, I was told there were no Sound Lab dealers to speak of in the Southwest. The Sound Lab person said I could always come to the factory in Utah for an audition.

Another trend is that many surviving shops won't stock above a certain level anymore. I recently phoned a large, well-established, out-of-town hi-fi store where I've bought gear to inquire about whether they had KEF 207s or 205s available for audition. "Oh, we wouldn't be able to keep those on the floor," was the response. "You'd have to special-order them."

Another store in Dallas professed last fall to be "the only retailer in Texas with the new MartinLogan Summits." They had the $10,000/pair electrostatics all right, placed on either side of a giant home-theater cabinet, hooked up with cheap cable, and powered by a Denon surround-sound receiver. Not surprisingly, they sounded horrible. Is this the best MartinLogan can hope for these days, especially in a state raptant with the well-heeled? No wonder founder Gayle Sanders decided it was time to cash out.

Elsewhere, I am alternately sobbed to by smaller-store owners as "the last of the true hobbyists—there aren't enough of you," and berated by others: "You just aren't buying enough for me to keep the doors open."

The most annoying attitude I often encounter these days is encapsulated in this story: One retailer I called from my hotel room responded to my request for an audition by asking, "Are you going to buy today?" He then greeted me at the store with, "Are you a doctor?" When I replied no, he now furrowed his face and said, "Ah-ha!"

A hobby is supposed to be fun. Finding the equipment is hard work. Talking to elitist/suicidal store owners is hard work. Renting a van and driving hundreds of miles to borrow a set of speakers is hard work. A hobby is supposed to be fun.

How do we bring the fun back? Any thoughts? I've got some, but that's another letter. In the meantime, I may take Sound Lab up on their offer of a factory demo. I still want to believe.

John Stancavage
Krell1150@aoi.com
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**Wes Phillips**

Removal of Hazardous Substances (RoHS), a directive by the European Union (EU) that JA wrote about in our August 2005 newsletter—see www.stereophile.com/images/newsletter/805Bstph.html—and which goes into effect on July 1, 2006, sounds like apple pie or motherhood—something that would be hard to argue against. And its expressed purpose of removing hazardous substances—lead and mercury, for example—from consumer products is assuredly a noble one.

Yet, mention RoHS to a specialty audio manufacturer and the air just might turn blue with intemperate language. “Do you know any way to visually examine for a cold solder joint if you’re not using lead solder?” I heard one high-end manufacturer ask another recently.

“No,” came the succinct response. “Neither the bleep do I!” (Yes, he said bleep, but we knew what he meant.)

“And you know the worst part? I can’t use lead-based solder on my circuit boards, but car batteries—which use about a million times more lead than a whole system of my stuff—are exempted from the regulation. Don’t you suppose there’s a lot more lead leaching into the environment from discarded auto batteries than from used tube amps?”

“That’s pretty rich,” added a cable manufacturer at the same table. “But what really gets me are the other exceptions. All eyes were now on him. “Infrastructure signaling systems are exempt. That means traffic-light control systems, military devices, and other ‘essential’ gear that can’t risk being subjected to the unreliable lead-free solders.”

“What about fillings?” chimed in the VP of a speaker company. “I have mercury in my mouth, but I can’t have even a trace of it in my products? What kind of sense is that?”

Of course you know what happened next. I had to go and open my big mouth, “Surely you’re not proposing that we junk environmental standards on products just because they’re inconvenient?” Now all eyes were on me.

“But of course not,” the solid-state manufacturer demurred. “But take the solder question. The amount of lead in a specialty audio product is less than five grams, which is infinitesimal compared to, yes, a car battery or the thousands of miles of glazed ceramic sewer lines buried around the world or the tons of picturesque glazed roofing tiles some countries are so proud of.

“But even that’s not the real issue. Leaded solder melts at a low temperature and is reliable and simple to QC. All of the lead-free solders require 30–40° more heat to melt and that heat represents energy consumption. It very well could be that eliminating lead in our products makes them more hazardous to the environment.”

This brought in a new participant, the president of a highly respected Japanese manufacturer. “We’ve been looking at this in Japan since 1998, and by 2003, major Japanese companies removed more than 90% of the lead out of our products. But smaller manufacturers throughout Asia haven’t complied yet—and we frankly wonder if they will. China says it’s 100% RoHS compliant, but small manufacturers in Thailand, Malaysia, and Taiwan may just completely write off the First World markets and concentrate on places where price is the only criterion.”

“ Heck,” said the tube manufacturer, “I might write off the European market myself. It doesn’t represent sales to the extent that it makes economic sense to comply to the EU standards just for the prestige of selling over there.”

“So why comply?”

“Because California has passed a law banning the use of heavy metals in components as of January 2007. You know that’s just the start of it over here.”

All: “Wait! Another round—now!”

**US: THE PUBLIC AIRWAVES**  
**Jason Victor Serinus**

Many of us got our first taste of classical music via the radio. Now, when public radio’s audiences for news and information programs are rapidly expanding, and broadcasts of classical and other musical genres (eg, jazz, folk, world) are diminishing, research has now shown that people experience classical music via the radio more than from any other source. It’s fair to assume that this is true of their exposure to jazz, world, and “alternative” music as well.
On January 19 and 20, 2006, representatives from four of the major organizations responsible for programs broadcast nationally on public radio—American Public Media of St. Paul, National Public Radio, Public Radio International, and the WFMT radio network of Chicago—convened the Music & Media Forum’s inaugural meeting in New York City. The group of broadcasters, new-media producers, musicians, music-industry professionals, and representatives from electronic media met to identify ways to use opportunities presented by new broadcast and media technologies “to reach, broaden and serve audiences for multiple genres of musical arts in America.”

But rather than confining themselves to issues of music on public radio, the Forum also addressed the future of music itself in a changing world.

According to Music & Media Steering Committee member Mary Lee, who is also the project director of American Public Media’s Classical Music Initiative, the Music & Media Forum received the financial support necessary to convene the meeting only six weeks before it took place. The deliberately radiocentric Steering Committee nonetheless managed to assemble a group of media and music professionals that Lee called “astonishing in their diversity.” “We were able to tap leaders from every profession,” she told Stereophile. “With room for only 60 people, there were people who came knocking on the door wanting to attend whom we had to turn away because of lack of space.”

Besides public-radio professionals, attendees included representatives from the musicians’ union, Nonesuch Records, the Metropolitan Opera, a former member of new-music ensemble Ethel, the Kronos Quartet, the Milwaukee and San Francisco symphony orchestras, Carnegie Hall, Microsoft, Magnatune, the National Endowment for the Arts, IMG Artists Management, and ASCAP. Though a few music critics were invited, none of them could make it. (For the complete list of attendees, see www.musicandmedia.org/event.)

“We discovered that there were many people who felt they were working on the same issues independently,” said Lee. “We also found many commonalities. We realized that continuing to work together will generate a much greater payoff than trying to work on an individual level.”

Following the meeting, the facilitators posted reports about the meeting on the Music & Media website, www.musicandmedia.org. According to the reports, participants expressed a desire to create a new national organization “to act in the public interest for the mission of supporting musical arts and culture in media and life...and stimulate and serve demand for the musical arts.” They also “grappled with a number of opportunities and challenges, raised numerous critical questions, and imagined an array of possible futures and desirable paths forward.” What they didn’t do was come up with answers.

The nine members of the Steering Committee met next on March 31, in St. Paul, Minnesota. Their goals were to identify what kinds of music they want to support, make recommendations for action, and identify an appropriate organization to take that action. The committee decided that sufficient ideas and interest had been generated to justify forming a new nonprofit organization to advance the work of the Forum. Because it takes some time to attain nonprofit status and get a new organization off the ground, the committee may in the interim initiate action under the auspices of an existing nonprofit organization.

The Music & Media Steering Committee identified four areas requiring action:

1) Digital Rights and Intellectual Property: “Issues of intellectual property, copyrights, and digital rights are so complicated,” Mary Lee explained, “that they often prevent us from doing many things that could further the musical arts. You can’t easily do music podcasts because of issues surrounding who owns the digital rights to the recording and who must be compensated. Rights issues can also limit how often we stream a performance, make it available for download, or even archive it, especially if it’s a live performance involving union musicians.”

2) Research and Development: Media organizations need to better understand their audiences. What music are people interested in? How can programmers lead listeners to new material and broaden their scope of interest? Once research is conducted that answers those questions, how do programmers create pilot projects that can begin to translate the findings into action? To the extent that the subsidies on which the arts traditionally rely may not be available to underwrite such projects, how can media organizations create the means for initiatives to be successfully sustained and expanded?

3) Audience Development: “We need to make sure we’re bringing in a younger audience,” said Lee. “We need to look at issues of genre boundaries and multi-genre music, and identify increasing points of contact between classical, jazz, world, and ‘alternative.’” An example of a successful public-radio format aimed at a younger demographic is Minnesota Public Radio’s new station, The Current, which broadcasts and streams eclectic rock along with a mix of jazz, conceptual hip-hop, local indie artists, and offbeat music that does not make it into mainstream top 40 programming (http://minnesota.publicradio.org/radio/). Differences in how different age groups access media are demonstrated by the fact that, even though The Current’s listening audience is smaller than that of MPR’s other stations, a far greater percentage of its listeners tune in via the Web than do listeners to classical music and current-affairs programming.

4) Revenue: There is a need to identify and implement successful business models that create demand for new music programming and raise the money necessary to make it possible.

“People who are involved in classical music performance tend to [lag] behind how music lovers use new media technologies to access whatever content they want,” says Lee. “There is so much creativity and energy happening in live performances these days. Through the power of media, it can reach a much larger and more diverse audience. Given the manner in which distribution and media formats are expanding every day, it’s becoming a world where anything is possible.”

UK: NOTTINGHAM
Paul Messenger

At this year’s Sound & Vision Show, in Bristol, England, the most interesting demonstration was of the battery-powered high-end tube system that Kevin Scott was demonstrating in his Living Voice room. I covered this demo in last month’s “Industry Update,” but a single paragraph in a show report is not enough to do justice to something this radical or interesting.

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INDUSTRY UPDATE

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Howard Van Orman, Wilson Audio’s CFO, wants to share with you a little inside knowledge about pricing.

When someone decides to market a widget, there are two ways to price it. Option 1: (A) Determine, based on market research and the strength of your brand, what you think its value will be in the marketplace. (B) Manufacture it for as little cost as possible. (C) Subtract B from A and call the difference your profit.

This is, by a wide margin, the dominant business model in the high-end audio industry. There’s nothing wrong with it. Although, when we start finding loudspeakers retailing for eight, ten, and even twenty times what they cost to make, we begin to wonder: just whose definition of value are we talking about?

At Wilson Audio, we operate according to Option 2, a very different—and many would argue outmoded and even naïve—business model: (A) We begin by determining what we want our new product to achieve. (B) Then we figure out what it will cost to make, as uncompromisingly as we know how. (C) We add a reasonable amount to the cost of manufacture and call that our profit.

Given that Wilson loudspeakers are not low-priced, Howard thought it may interest you to know that Wilson Audio has one of the lowest profit margins in the industry.

Recently, Dave Wilson attended a seminar at a renowned business school. When the assembled professors and experts learned of Wilson’s pricing strategy, they told him he was making a big mistake; no one used the cost-plus-margin model these days, and, according to the market-value model, his speakers were seriously under priced.

Dave thanked them for their kind words of advice and told them that, notwithstanding, the reason for our success was our customers’ recognition that what they received in exchange for their hard-earned cash was a product exquisitely engineered from world-class components and materials—and fairly priced.

Sure, no one will claim that the new WATT Puppy 8s are inexpensive. But, as Howard knows only too well, they remain a singular high-end value.

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and systems. The basic problem is that, as the performance of hi-fi components has steadily improved over the last 20 years, the quality of mains electricity has steadily deteriorated. What used to be a clean, simple sinewave here in the UK has become heavily polluted by high-frequency components generated by the switch-mode power supplies used in all manner of household devices.

But the pollution created by your other domestic devices—or even your neighbor’s—is only the beginning. The radio-frequency (RF) environment has also gotten busier and busier, and household mains wiring tends to act as an RF antenna. The already complicated business of mains supplies is made even more complex by the major differences between different countries' quality, reliability, and voltages, as well as between city and rural electrical systems within a country.

The musical experience I had in the Living Voice room was far superior to what I usually hear at a hi-fi show. Several factors might have been responsible: It was one of the most costly systems at Sound & Vision, and Kevin Scott has excellent taste in music. But, as I've mentioned in previous show reports, one likely reason for the generally poor quality of exhibition demos is the very fact that so many audio exhibitors have gathered under one roof in adjacent rooms in the first place, all busily if unwittingly polluting each other’s power supplies. In such an environment, any battery-powered system will have a clear advantage.

Living Voice is hardly the first high-end firm to use battery power. Crinson Elektrik, Pink Triangle, Holfi, Dynaudio, and darTZeel have all applied the technique to individual components. What is I suspect is unique about Living Voice’s approach is that, in being system- rather than component-specific, the Music Plus power supply is entirely independent of the components it powers.

Scott was using the Music Plus with his best system, assembled mainly from components he makes or distributes, including Kondo tube amplification, phono cartridge, step-up transformer, and cables, with an SME 10 Series V turntable and Resolution Audio CD player, plus Finite Elemente equipment racks and Living Voice’s own OBX-RW loudspeakers. The total price of the system was nearly $250,000, which meant that adding the 500W Music Plus supply represented a system price increase of less than 7%. In such an unreasonable context, the Music Plus’s price of about $17,500 is reasonable.

Several factors spurred the development of the Music Plus. When Kevin Scott was developing the crossover for his OBX-RW speaker, at one point he thought he’d gained a worthwhile improvement, only to hear it evaporate the next day. He eventually figured out that the crossover’s unpredictable behavior could be blamed on the mains voltage at the Living Voice factory, which varies from 235V to 247V. Using a steady and independent power supply eliminated the voltage swings, and the crossover now worked as well as Scott had thought it had in the first place. One of Scott’s wealthy clients lives in Thailand, where variations in the mains quality are far greater than in England, and complete power outages are common. This client is now using a Music Plus supply, and reckons it’s the most cost-effective upgrade he’s made. Another wealthy client wants to go sailing around the world, and hates anything to do with digital audio. A Music Plus power supply should take care of the unpredictabilities of a diesel generator, though the choice of source medium and hardware is still giving Scott food for thought.

The complete Music Plus package is flexible, so that it can be tailored to individual requirements. The three core components are a battery charger, a bank of batteries, and one or more inverters, these wired together with various switches, junctions, fuses, and control electronics. Scott favors lead-acid gel batteries, which can be shipped anywhere and don’t vent gas while recharging. At Sound & Vision he used four of these, each rated at 12V/200 amps and connected in series and parallel to deliver 24V—enough to run the system at full sound quality for five to six hours before needing to be recharged. The best sound is obtained, Scott claims, when the batteries are kept at 70–100% of full charge. (Using just the first 30% of full depletion also maximizes battery life, which should be 7–8 years.) The system can be operated while the batteries are recharging, though at less than the best sound quality.

The batteries’ 24V direct-current output is converted back to alternating current via the inverter, which are essentially switch-mode supplies set up to reconstitute the alternating waveform and boost the voltage. It’s important that the inverter’s high-speed switching is well suppressed and that its source impedance is as low as possible. While the sound with one inverter is, according to Scott, beautifully sweet and involving, using multiple inverters in parallel helps drop the source impedance and adds scale, strength, and authority to the sound.

While sidestepping mains pollution by use of a battery power supply is very likely to grant sonic benefits, increasing the supply’s source impedance can compromise a system’s dynamic and/or bandwidth performance. As I pointed out in April’s “Industry Update,” the replacement of an ancient 250 amp fuse at the substation feeding my house improved the sound of my hi-fi, presumably because it had lowered the source impedance of the mains and/or corrected any diode effects created by corroded contacts.

Obviously, Living Voice’s elaborate and costly battery-power approach will isolate an audio system from all mains pollution generated by any equipment outside the system itself, and, provided the wiring is kept simple and short, should prevent most RF pickup as well. The question remains whether the advantages gained by this isolation will outweigh any disadvantage created by the battery supply’s source impedance.

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of the household electrics, was about the only means of improving the AC supply available some twenty years ago, and is still a precaution worth taking. Since then, many other techniques and approaches have been applied, though the results can be unpredictable. My own experience, gained using mainly Naim electronics, has been that inserting any device between system and mains can have detrimental as well as positive effects (though I do use Vertex AQ Jaya parallel absorbers to good effect). So caution is required.

As with many choices in hi-fi, some compromise is likely to be involved, and selecting the right approach to mains power will depend on personal taste, the system involved, and very much on the condition of the mains supply in your neighborhood. Living Voice’s Music Plus takes things to the logical extreme, and is intriguing both for that reason and because it allows a completely free choice of components for the rest of the system.

Some interesting alternatives present themselves, however. For example, liquid—rather than gel-based lead-acid batteries, while less convenient, should offer lower internal resistance and so might sound better.

Another way to eliminate mains problems might be 12V car-audio gear. I spoke to Gordon Taylor, of in-car amplifier specialist Genesis, who knows of some German enthusiasts who get very good domestic sound using Genesis auto amps with a Sony ProWalkman and a battery-powered CD player, all entirely isolated from the mains. Taylor is now developing a 12V amplifier that uses tubes in its pre-amplifier section. If, as seems likely, the quality of our domestic voltage supplies continue to deteriorate, car audio gear might well prove worth exploring.

US: MINNESOTA
Jason Victor Serinus
The Minnesota Orchestra has become one of the first symphony orchestras in the US to archive selected broadcasts for online streamed listening on demand. Through an arrangement with Minnesota Public Radio (MPR), which has broadcast virtually every Minnesota Orchestra concert since 1974, the performances are now available for up to a year’s time at www.mpr.org/minnesotaorchestra.

MPR has currently posted nine complete concerts from the Minnesota Orchestra’s 2005 season. Highlights include Aho’s Symphony No.7, Shostakovich’s Symphony No.5, Nielsen’s Symphony No.5, Emanuel Ax in Mozart’s Piano Concerto No 27, Adam Kuenzel in the Nielsen Flute Concerto, Viktoria Mullova in the Brahms Violin Concerto, Louis Lortie in Liszt’s Totentanz, Yefin Bronfman in Beethoven’s Piano Concerto No.5, Leila Josefowicz in Prokofiev’s Violin Concerto No.1, and Verdi’s Requiem, with star soloists Christine Brewer, Lilli Pasikivi, Frank Lopardo, and James Morris.

The extra availability of Minnesota Orchestra performances is of special interest to audiophiles who have become enamored of the orchestra’s sound via its award-winning CDs for Reference Recordings. (RR’s Casa Guidi CD of Dominick Argento’s music, featuring the Minnesota Orchestra and mezzo-soprano Frederica von Stade, won a Grammy in 2005). Though the orchestra’s switch of music director from Eiji Oue to Osmo Vänskä has precipitated a (perhaps temporary) record-label switch from Reference Recordings to BIS, the Swedish company Vänskä has traditionally recorded for, BIS continues a commitment to high-quality recording by releasing the ongoing Vänskä/Minnesota Beethoven cycle on multichannel hybrid SACD.

The first Beethoven SACD release, containing Beethoven’s Symphonies 4 and 5, received a Gramophone “Editor’s Choice” award and a host of equivalent accolades from related publications. Symphonies 3 and 8 are due out in June, and in the Ninth (Choral) Symphony, featuring the Minnesota Chorale and soloists Helena Juntunen (soprano), Katarina Karnéus (mezzo), Daniel Norman (tenor), and Neal Davies (bass-baritone), expected this fall. Audiophiles wishing to audition these renditions before purchasing can find the same live performances of Symphonies 1, 3, 6, and 8 (albeit in less than audiophile sound) on MPR’s Minnesota Orchestra webpage.

According to Preston Wright, producer of MPR’s web page, Minnesota Orchestra’s programs are currently archived in 32k stereo and are playable on the Windows Media Player. “We’re in a transition stage,” he explains. “We’re trying to meet the audience halfway, so that people with all different speed connections can stream without difficulty. We expect to increase resolution to 128k sometime in the future. Meanwhile, we find that for 32k, Windows Media Player’s sound quality is superior to Real Player’s.”

Wright has tremendous praise for the orchestra’s progressive attitude. Its administrators realize, for example, that allowing people to stream the same Beethoven concerts that are available on SACD will entice more people to buy the recordings. Tony Woodcock, CEO and president of the Minnesota Orchestra, notes that the orchestra’s relationship with MPR has always been positive. For the last five years, the station has posted live web streams of every Friday night concert. Two years ago, MPR even flew their staff and equipment to Finland to enable a live broadcast of the orchestra’s last concert on their European tour.

US: SAN FRANCISCO
Jason Victor Serinus
Enjoying classical music performed on original instruments has just gotten easier. After 25 years of issuing recordings on LP and CD, the invigorating Philharmonia Baroque Orchestra has decided to instead make recordings of its live performances available for download.

“There’s no question that this orchestra built its reputation outside of the Bay Area through its recordings,” explained the PBO’s executive director, Robert Birman, of an organization that appeared in London’s BBC Proms series and at Holland’s Concertgebouw last year, and spent two weeks touring Germany. “After 9/11, so much changed for everyone in the industry. Because Tower and HMV were beginning to close their branches, the old school of music distribution was becoming increasingly irrelevant. We in PBO soon concluded that symphony orchestras in general have to change to stay relevant in this modern society.”

The PBO’s move to the Net was motivated in part by financial considerations. With the classical recording industry’s current downturn, the orchestra issued its first self-produced product on the Avie label, a hybrid SACD/CD of Alessandro Scarlatti’s Vespro di St. Cecilia, in December 2004. The PBO retains ownership of the recording and receives most of the income from its sales. Yet even though the three-disc set is distributed in 36 countries and is the first recording of the work, the orchestra has no hope of ever making back the $100,000 they sank into the project. So they’ve now made a 128kHz MP3 version of the recording available for download via Magnatune.
Birman contrasts the recording situation of American orchestras with those abroad. While American orchestras basically aren’t equipped for TV broadcast, a new 24-hour classical-music TV channel in China serves 1.3 billion people. European orchestras keep producing CDs and DVDs, but American orchestras find the process extremely difficult because of the loss of traditional distribution channels.

“PBO takes an antique art form and combines it with cutting-edge technologies,” Birman said, citing the orchestra’s collaborations with the Mark Morris Dance Company on Rameau’s Platée, Handel’s L’Allegro, and Purcell’s Dido and Aeneas. “In Europe, our work with Mark is one of the things we’re most known for. Even after 25 recordings, it’s what European agents refer to, mainly because the blend of traditional art with modern choreography is so compelling. But none of these collaborations was ever filmed, because the cost would have been exorbitant.”

Musician fees for Internet distribution of classical music in the US were initially set on a national level, resulting in costs three times higher than in England. Then, in 1999, the American Federation of Musicians (AFM) empowered orchestras to set rates locally for the Internet distribution of recordings. "The fact that local orchestras could determine their destiny in terms of Internet releases marked a major shift," says Birman. "Rather than paying a onetime buyout fee at the time of release, orchestras can now pay players as they go, according to sales, which makes the process far more affordable."

More than 18 months ago, thanks to agreements with John Buckman of Magnatune and the San Francisco chapter of AFM, the PBO became one of the first American orchestras to distribute its recordings via the Web. While only live recordings are now available, future releases may include studio projects recorded specifically for Internet distribution.

Music lovers can access all of the PBO’s recordings on Magnatune via www.philharmonia.org. Files are available for free audition before downloading. All proceeds (50% of the sale price) go to the artists; the orchestra’s only payment is its increased visibility. Magnatune has recently agreed with Apple iTunes to simultaneously release PBO titles on both sites, which should greatly increase sales.
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At 15.4 lbs (7kg), Cayin's HA-1A may be the world's heaviest headphone amp. Sorry, you can't use it on a plane, train, or bus, and you can't run it on batteries: its power consumption is specified as 60W.

As its model name suggests, the HA-1A is, first and foremost, a headphone amplifier. But that's not all. It can serve as a line-stage preamp with a single pair of inputs, or as a 2-watt integrated tube amp. Of course, it sounds better in 2.2Wpc ultralinear operation.

The Cayin HA-1A is from Zhuhai Spark, in China, recently liberated from the CATIC Group. It retails for an "introductory price" of $695, and will cost $749 at some unspecified point in the future. A local dealer may be hard to find, but Chad Kassem, of Acoustic Sounds, tries to keep it in stock. This Cayin is flyin' out the door, Chad told me. He phoned to chat about it, in his inimitable New Orleans drawl:

"Hey, Sam, m'man, you gotta hear this thing. It's fantastic. It's gonna mess with your mind, dude. I'd send you one from stock, if I had one. Maybe you should contact the distributor, Steve Leung, at VAS Audio, for a review sample."

Steve's first name is really Sze—pronounced "sezz." Near name, but Steve is easier. He was an audiophile long before he got into the audio business. When Sze sezz something is good, it is. Did I mention that our Wezz is a friend of Sezz?

I ran my Sony XA-777ES SACD player directly into the Cayin HA-1A and used my two reference headphones: Sennheiser's HD 600 and Grado's RS-1. I also yanked out my 30-year-old Yamaha HP-1 'phones. I think that the best headphones have gotten only incrementally better, which is why I've stopped chasing after each new model.

The HA-1A is described as "all vacuum tube, all handmade." The casework is exquisite, the look retro. Two EL84 tubes (from Electro-Harmonix, in Russia) show through a circular window on the front. The two other tubes are a 12AX7 and a 12AU7; half of each of these looks after the left channel, the other half handles the right. When using the HA-1A for its main intended purpose of driving headphones, you can vary the output impedance via a knob on the back. I used the lowest setting (6–32 ohms) for my Sennheisers, the highest (121–300 ohms) for my Grados, the highest (121–300 ohms) for my Sennheisers.

If you've been driving a pair of quality headphones from the headphone jack of a preamp or integrated amp—or even if you already own a standalone headphone amp—the HA-1A may come as a revelation. How good can your present headphones sound? Probably very good indeed. So good that you might stop listening to your loudspeakers.

Reserve the ultralinear mode for using the HA-1A as an integrated amplifier, when you'll need that 2.2Wpc. Take care when switching between modes: there's an unwelcome but probably not damaging pop. Ouch, that was my ear drum.

As a line stage, the HA-1A sounded clean and very clear: open, transparent, dynamic—and sweet, thanks to the tubes. That single pair of line-level inputs is a limitation, but you could always rig up a switching box.

More intriguing, perhaps, is the idea of using the HA-1A as a part-time integrated amplifier—for the bedroom, office, dorm room, vacation condo, or prison cell (nah, it wouldn't last long there). You need high-sensitivity speakers—maybe something using a Fostex full-range driver. But for background listening? For more serious listening at louder levels, you can always use your favorite 'phones.

The HA-1A provided the SET experience without the expense of hideously expensive or nearly unobtainable output tubes. New EL84 tubes are cheap, readily available from several sources, and generally reliable. The fine-sounding EL84—a favorite of the French reviewer Jean Hiraga, I'm told—is smooth, delicate, crystalline, and free of tube glare. Free, too, of the fuzzy, phasey quality that can characterize the larger EL34. Of course, the EL84 doesn't put out the power of an EL34 or a 6550—more proof that power corrupts. Manley Labs' Stingray integrated amplifier ($2250) is based on the EL84.

The HA-1A breathes life and light into music in a way that transistors—and many tube amps—simply cannot. It makes musicians sound here, not there. This is what SET can do: not transport you to the recording venue, but transport the performers to your living room. Immediacy, intimacy—nothing can top tubed SET. Those experts who opine that all hi-fi sounds "electronic" haven't spent much time around SET tube amps.

I doubt that the HA-1A works its magic by fooling with phase relationships or blending channels. What it does, it does naturally: expand the soundstage so that it floats outside, not inside, one's cranium. The effect is not as natural as listening to a good pair of loudspeakers, but the experience is enjoyable on its own terms. The HA-1A has a way of making headphones sound...
The difference is not technical," she explained. "Black CD-Rs have a dyed polycarbonate that makes them black. It's a design preference."

Memorex will probably have no idea what to make of this, but black CD-Rs might be a listening preference, too. The sound appears to come from a black background. (I'm not being facetious.) Black CD-Rs are quiet. Unfortunately, I can't use them in my Harman/Kardon CDR 26 dual-deck recorder-player; it requires the use of "audio" CD-Rs, which sell at a premium because of the royalties payable to composing and performing artists that are included in the price. I used the H/K to make copies of my own CDs for the car, and I still use it to make compilations of my favorite CDs of 1920s and '30s music.

I was expecting the CD-R copies to sound marginally inferior to my original source CDs. Lo and behold, I thought I heard just the opposite: the copies sound better than the originals. Not only that, different audio CD-Rs sounded...well, different. I had—and still have—a preference for Sony audio CD-Rs. Look at the discs and you'll see that the background is green.

I mentioned this phenomenon to two of our Russky friends, Lev and Pavel, both of whom are engineers: one in optics, the other in computer software. Of course, they dismissed as wacko the notion that CD-R copies could improve on the originals. Bits is bits. But I heard what I heard. My Harman/Kardon CDR 26 copies at 1, 2, or 4x. I heard no differences among the three copy speeds.

For more than a year now, I've also had a CD Copy Cruiser, from Alera Technologies. It can copy as fast as 52x, but I make my copies at 4x. Slower speeds do make better-sounding copies. Lev and Pavel found that hard to swallow, too. After all, a bit's a bit. Maybe how a bit is burned makes a difference.

You can buy a CD Copy Cruiser (Part No. 260123) directly from Alera Technologies for $269. Less costly CD duplicators are available, but the Copy Cruiser is built like a tank headed for Iraq and it has worked flawlessly for me. The thing weighs 101 lbs (4.6kg).

Once the Cruiser is set up, copying couldn't be easier. Place a source disc in the upstairs drawer, a blank downstairs. Push a button. Minutes later, the bottom drawer pops open with a freshly toasted CD-R. You can also program the machine to copy particular tracks, leaving the disc's table of contents (ToC) to be written later, when you finalize, or close, the CD-R.

I compared copies of a single source CD burned to a standard Sony data CD-R and a green-background Sony audio CD-R. I preferred the audio CD-R. The difference seemed to be a lower noise floor, which ever so slightly expanded the dynamic range. But even such small differences can reduce listening fatigue.

Sony audio CD-R vs Memorex black CD-R was a tough call. Maybe I preferred the Memorex for design reasons after all. There's something comforting about a black CD-R. It reminds me of black vinyl.\(^1\) Maybe CDs—the commercial, perfect-sound-forever ones—should have been black in the first place. Or green. Or gold.

I'm afraid I'm left with more questions than answers. But CD-R copies still generally sound better to me than the discs I copy them from: smoother, sweeter, less noisy, more dynamic—in a word or four, easier on the ears. Think of the possible variations: regular data CD-Rs, audio CD-Rs, green CD-Rs, black CD-Rs, gold CD-Rs—and other colors. The machine, too, probably matters, as well as the choice of data drives. As for copy speed, the slower the better, the deeper to burn the bits. But how slow? 8x? 4x? 1x? The mind boggles.

There does seem to be a consensus of sorts: CD-R copies are generally superior to the original source discs, and CD-Rs burned in a standalone duplicator sound better than those

---

\(^1\) A couple of years back I fitted my PC with a Plextor Premium CD burner (recently discontinued, according to http://www.plextor.com/ENGLISH/products/Premium.html, which allows Plextor's PlexTools program to test burned discs for C1 +C2 errors, reflectivity, and jitter. The lowest error rates I have found were on Verbatim's "vinyl" CD-Rs, which also don't appear to be available anymore.

—John Atkinson
It will leave you speechless.
burned on one’s computer. This last point is controversial. Results depend on the program you use, the quality of your CD-RW drive, the copy speed, and, perhaps most of all, the quality of the CD-R blank: thickness of the aluminum substrate, thickness of the dye layer, type of dye used, etc. You could go nuts.

Gary Leonard Koh, CEO and managing director of Genesis Loudspeakers, took up this issue in a “white paper” published in November 2004: “In Quest of Absolute Fidelity: The Saga of the Black CD—Finding Black Gold,” available from the “Downloads” section of www.genesisloudspeakers.com. A tidbit: “The [black CD-R] copy is more musical [than the original source disc], the high frequencies ring with trueness that I used to experience only from records and live performances. The air and image stability are much better, and instruments and vocals sound more dynamic and true-to-life.” Koh cautions that not all black CD-Rs sound alike, and notes that there are some nonblack CD-Rs—gold, in particular—also sound very good.

Enter Clark Johnsen, author of a strange book, The Wood Effect. Johnsen is a maven of absolute phase, among other things. He’s fun to read, but he can get a bit feisty. Take an article he published in Positive Feedback Online, “The Biggest News You May Ever Read (About Audio).” Clark is not one for understatement. (You can read the article at www.positive-feedback.com/Issue16/RealityCheck.htm.)

Clark had discovered something called the RealityCheckCD™ Audiophilophile Gold Grade Duplicator, RCCD-AG3.3, available from Digital Systems and Solutions™, whose CEO is George S. Louis. A lawyer, Louis has trademarked nearly everything in sight, and judge for yourself. “Sam, you’ve hit on the very heart of the problem: No one really knows the answer to that, and all black CD-Rs aren’t equally good. If the engineers really knew the answer to that kind of question or even cared...The truth is that there’s much, much more we don’t know about audio and video than we do know...I...Have we all been duped?” Clark asked. He then answered his own question: “Maybe. But the best part is, your CDs have been duped And how do they feel?” I asked George Louis for clarification. “Regarding our upscale models, I’m not aware that they are available off the shelf anywhere; but that’s not to say that someone might not be able to purchase the parts separately and assemble it themselves, just as some people assemble their own computers.” George also wrote that he is working on “various firmware upgrades” that would further differentiate his duplicators. But “If people want lower-priced duplicators, I’ll sell those duplicators to them for even less than the online pricing.”

Contact Louis at gslouis@gslouis.com. For a small charge, he will duplicate and treat some of your own CDs and return them so that you can hear and judge for yourself.

Might a less expensive duplicator do the job just as well? That’s the larger point out, not all black CD-Rs are the same. Discounts on the discs and other "supplies" are available to those who buy Louis’s duplicator; at a base price of $495. George’s duplicators copy at 8x and 16x. He also sells UltraBit™ treatment kits and cloths, UltraBit Gold™ treatment kits, and CleanDisc™ treatment kits. George’s mottoes are “Hear the Music Not just Notes”™ and “Listen to Music Not Measurements”™. Needless to say, they’re trademarked, too.

I read Clark Johnsen’s article and curiosity got the better of me. I phoned George S. Louis, who graciously offered to treat and copy a half dozen or so of my favorite CDs. I found the copies superior to the original source CDs, as expected. But, based on these few sample discs, I struggled to hear whether Louis’s black CD-Rs sounded any better than or different from the Memorex black CD-R copies I ran off on my Alera CD Copy Cruiser. When I asked Louis to explain why the copies sounded superior to the originals, he replied, again by e-mail: “One reason that CD-Rs almost always sound better than original stamped CDs is that it’s like getting a free rim treatment. Original CDs are stamped from the label side, so that their pits are convex (bumps) on their reading/playing side. When the laser light hits the convex pits, the light scatters to both the inner and outer rims of the disc and is reflected back to the player’s photo diode, which reads the disc.

“However, on a CD-R the pits are burned into the reading/playing side so that less of the laser light is scattered toward the disc’s inner and outer rims. Edge treatments have little effect on the playback quality of a CD-R because most of the laser’s light is read back without secondary reflections.”
It has been said that the most demanding challenge is to follow up success with another. If so, Vienna Acoustics has passed with flying colors. The all-new Grand Series from this first-rank speaker house builds upon their previous offerings in every way.

From crisp, clean veneers—a Viennese hallmark—to sound quality that is the foundation of their carefully crafted reputation, these new Grand offerings are lovely in every sense of the word.

Beethoven Concert Grand is featured here in cool, elegant maple. Other available finishes include a warm cherry and flawless piano black lacquer. An optional hand-selected, book-matched, rosewood is also available at a slight up-charge.

Vienna Acoustics Grand Series - beauty personified coupled with sound quality that is expensive, exquisite and refined.

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question, isn’t it? Might less expensive blank CD-Rs provide equally satisfactory results? What about other—

Rawmode copy speed is 8x. The manual needs to be clearer about this, too: To choose Rawmode Copy, you press

ahem—fluids? I have no ready answer.

One inexpensive duplicator has its fans at Audio Asylum: the CoolCopy CD2CD CB-9168, manufactured for Ily Enterprise, Inc., which specializes in professional-grade CD and DVD duplicators. I bought mine for $189 plus shipping from Six Star DJ, Inc., in Los Angeles.

At 3.9 lbs (1.8kg), the CoolCopy is lightweight compared to the Alera CD Copy Cruiser, which weighs 10 lbs. I’ll grant you this: the machine does look cool. And it’s portable—about the size of a small laptop computer. The twin decks are top-loading: the read drive to the left, the write drive to the right. To operate, turn the machine on, load the discs, and press Start. The default copy speed is 52x. In about four minutes, you’ve been duped—just like Clark.

The CoolCopy can also copy individual tracks, for making compilation discs. It comes with a USB connector for use with a PC or Mac as an external CD-RW drive. I haven’t tried any of these modes—with a deadline looming, I didn’t have time. The CoolCopy also functions as a CD player—but, like Alera’s CD Copy Cruiser, it has no digital output.

The CoolCopy’s Rawmode ‘will make an exact copy of the source CD.’ Does this imply that the default 52x mode doesn’t make an exact copy? While the manual doesn’t say, the Forward button to select function 5: System. Then you push Start. Then you move the Forward button again to select function 5.2: Rawmode Copy. Then you press Start again to begin copying. The unit stays in Rawmode until you switch off the power. Easy once you get the hang of it.

As expected, discs copied in Rawmode at 8x sounded better than discs copied in the default 52x mode. For knocking out a quick copy for the car, 52x is fine. But copies made in Rawmode sound less...raw. (Sorry.) Smoother, sweeter, more dynamic—better burned. You don’t want your CD-R copy half-baked or only lightly toasted, do you?

Should you treat a source CD with your favorite fluid before burning a copy—even if the disc doesn’t need cleaning? Of course, in cleaning your source disc, you’ll probably make some new scratches. You know how to clean a disc, don’t you? Always in a radial motion, never a circular. And no matter whose fluid you use, take a tip from Sam: Use as few drops as possible, and apply them with cotton balls.

Should you clean the blank CD-R before copying? Should you have your CD-Rs cryogenically treated? Should you be cryogenically treated?

As my wife, Marina, says, “You’re all nuts.”
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-- Steven Epstein, 12 time Grammy-winning Record Producer

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WATT Puppy System 8

So here it is.

Wilson Audio's signature product, in continuous production since the 1980s, now appearing in System 8 iteration. What does that mean to you?

- The anti-jitter crossover technology developed for the MAXX Series 2 and Sophia Series 2 is now part of the System 8. The transition from midrange to treble is significantly more coherent and seamless. Transients are more clearly delineated, without audible overshoot and grain. Bass linearity, impact, and speed increase. The System 8 achieves greater tonal beauty and superior resolution—the same apparent paradox of the MAXX Series 2.

- The tweeter technology first developed for the MAXX Series 2—then incorporated into the Sophia Series 2—is now part of the new WATT/Puppy. High frequency noise and grain are audibly reduced. The MAXX Series 2 has been heralded as a true benchmark by many of the audio world's most distinguished voices. Now the WATT/Puppy takes its place alongside that paragon of musicality. The perception of air and extension, combined with sweetness and listenability, far surpasses any other comparable design on the market.

- In compliance with European Union requirements, the use of strategically placed lead ingots in the WATT cabinet has been discontinued. This regulatory mandate inspired a new combination of X material (prized for its lack of coloration and resonance) and M material (prized for its midrange clarity) in a sophisticated internal bracing configuration. The System 8 sounds more effortless, has greater transient impact, and achieves added tonal beauty and purity as a result.

- Finally, the recessed diffraction pads and the pin-grill system first employed in the Alexandria enhance the physical beauty and finish of the system.

Wilson Audio's best-selling multi-cabinet loudspeaker long ago secured its position as one of high-end audio's enduring icons. Not content with that, however, the WATT/Puppy System 8 demonstrates again its determination to be not only a player, but the standard bearer in its class.
You think the reaction to the Dubai ports deal caught George W. Bush by surprise? Try me and the uproar caused by my review of Continuum Audio Labs’ Caliburn turntable, Cobra tonearm, and Castellon stand (January 2006). I really didn’t expect to be attacked for reviewing such a product, especially after taking great pains to provide details confirming its purpose-driven, high-quality construction and the rigor of its R&D. Of course, the system’s $90,000 price is ludicrously high, but Continuum has sold more than a few, and the Caliburn owners I’ve spoken with are more than satisfied. The real excitement will come when Continuum introduces less expensive turntables based on the Caliburn’s R&D.

The online chatter, not to mention the letters to Stereophile’s editor, both disturbed and flattered. It was unsettling to read such charges as “I heard from a friend that Fremer only gave it a good review so he could get one cheap. If that’s true and can be proven, it could rock the audio world!” Never mind that audio reviewers are given what’s called an “industry accommodation price” on virtually any audio product made by anyone (under specified conditions), so what exactly did that’s going to rock the audio world, I don’t know.

The posters who claimed that my enthusiasm for products is directly proportional to their prices should check out my reviews of the V.Y.G.E.R. Atlantis turntable (July 2003), Audio Physic Caldera loudspeaker (November 2005), and Audio Valve Baldur tube amp (April 2006). Others demanded to know precisely what I’d paid for the Caliburn, and a few just about demanded to see my 1040 form so they could independently determine my ability to afford it. I could buy a very nice car for what the Caliburn costs me, and yes, I’m paying it off in installments, after having made a down payment of a little more than 50% of the industry accommodation price.

I was flattered that the review caused such an uproar. Thanks for caring! Do you know how much gear is “on temporary permanent loan” in other professional listening rooms? I buy what’s in my reference system. In any case, I can report that, after seven months of constant use and abuse, the Caliburn-Cobra-Castellon has proven 100% reliable, and I’m still astounded with every listen. I have zero buyer’s remorse.

Marantz does analog...again: the TT-15S1 turntable

Anyone remember the Marantz SLT linear-tracking turntable from the mid-1960s? It used a pantograph-like scissor mechanism to squeeze the cartridge straight across the record. It worked (sort of), and while it claimed zero tracking error, the amount of play in the plastic mechanism indicated otherwise. But Marantz hasn’t marketed a turntable in 20 years—until now. The new TT-15S1 is a more conventional pivoted-arm design built by Clearaudio to Marantz’s specifications and sells for $1799, including an $800 Clearaudio Virtuoso Wood Ebony moving-magnet cartridge.

Marantz introduced the TT-15S1 at the last year’s CEDIA Expo in Indianapolis. With the lights down and Dire Straits’ Brothers in Arms playing, attendees were ushered into a mini-amphitheater. Once the audience was seated, an announcer bellowed: “Ladies and gentlemen! Marantz is proud to announce the latest innovation in sound: analog!” With that, a spotlight revealed that the source of the music was the TT-15S1. “It got applause every time,” Marantz’s front-projector expert, Dan Miller, told me afterward. Ain’t that grand?

The TT-15S1 is basically an upgraded Clearaudio Emotion with a taller acrylic platter (25mm instead of 20mm), a differently shaped and possibly thicker acrylic plinth, and three substantial aluminum feet. Otherwise, like the Emotion, the TT-15S1 has an asynchronous AC motor isolated from the plinth by a circular cutout and silicone O-ring drive via a machined polymer pulley fitted with three setscrews. Too bad the instructions don’t advise snugging them symmetrically to seat the pulley evenly on the motor shaft.

The platter is spun via a polished shaft of hardened steel that rides on a ceramic ball bearing. The 9” tonearm of anodized aluminum, with magnetic antiskating system, will be familiar to any audiophile with even a passing interest in analog. It uses ceramic vertical and sapphire horizontal bearings and
a vestigial headshell that attaches to the arm tube with one substantial screw.

When this table was introduced as the Clearaudio Emotion, it created some controversy online because its bearing housing is not angled to match the headshell's offset. Theoretically, as a seriously warped LP made the tone-arm rise and fall, a force would be created that would pull the arm to the right. But unless you play a great many seriously warped LP's, I wouldn't give this a second thought.

Marantz's idea was to market a serious turntable that would offer proofpoint setup, including precise horizontal tracking alignment without the need of a protractor. They had Clearaudio modify the headshell so that the offset angle was fixed via two pins that fit into a slot on the arm's headshell mount (the Emotion's rotates over a wide angle). The pins also fit into a pair of sockets that fix the overhang properly for the supplied Clearaudio Virtuoso Wood cartridge. So even a vinyl neophyte can install and "align" the cartridge.

Setting up the review sample required inserting the tonearm into the plinth and installing the cartridge in the headshell, which shouldn't present problems for most users, even those vinyl neophytes. Arm height is adjustable and fixed with a single setscrew—not ideal, but the machining is extremely accurate, the fit sufficiently tight to prevent any play. You place the counterweight on the plinth under the bearing housing, then lower the arm shaft until the housing rests on the weight. You're even supplied with a small disc of the material the platter mat is made of, which you place under the counterweight to add height if you choose to use the mat.

I'll spare you the details, but I found the instructions for setting the vertical tracking force (VTF) a bit more difficult to follow, especially for an inexperienced analog fan. I suggest investing in an inexpensive stylus-pressure gauge to confirm the 2.0g setting recommended for the supplied cartridge. Antiskating is said to be correct with the magnetized screw set halfway in its hole. When I measured it using Wally Malewicz's antiskating gauge, it was.

The instructions' biggest omission is neglecting to tell the user what to do with the supplied vial of bearing oil. Is it extra oil for a pre-lubed bearing well, or are you supposed to squeeze some into the well? If the latter, how much? The hole comes taped over to keep the ball bearing in place, but as I saw no evidence of dripped oil, I added some, figuring it couldn't hurt. I wonder how many "dry wells" are out there? This is potentially a big problem down the road as these dry (if in fact they are) bearings begin to wear and make noise. Perhaps a service bulletin is in order?

But despite my minor quibbles and that last, major one, I was able to set up the TT-15S1 in less than half an hour. And, like other turntable makers whose products I've encountered lately, Clearaudio has seriously upped its level of finish. The TT-15S1 has an attractive, jewel-like appearance that's pleasing to the touch.

It also proved to be a more than competent performer, quiet and surprisingly well damped. Unlike with some lily designs, tapping the TT-15S1's plinth with the stylus in the groove did not result in loud thumps through the speakers. The platter spun slightly fast, but well within acceptable tolerances.

Because the TT-15S1's On/Off switch is on the motor itself, it's easy to accidentally move the motor enough to bring it into contact with the plinth and thus raise the system's level of noise and vibration. It's important to regularly check the motor's clearance and keep it centered in its cutout. Otherwise, this table is pretty much proofpoint.

The real star of the show is the supplied Clearaudio Virtuoso Wood Ebony cartridge ($800, output 3.3mV), which gives the TT-15S1 a startlingly full, coherent, dynamic sound. The bottom end was nicely expressed and well controlled, the midrange full and supple, and the top end, though somewhat tamped down, sounded smooth and relaxed, which of course is preferable to bright, etched, and grating.

The cartridge's overall tonal picture was remarkably coherent from top to bottom. Spatially, the Virtuoso Wood rendered depth exceptionally well, placing full-bodied images on a pleasingly wide though not particularly airy soundstage. To get that air and those fast, articulate transient details, you need to spend more—but considering the level of associated gear likely to be used with the TT-15S1, it's probably ideally balanced.

Given Marantz's extensive distribution network, the TT-15S1 should serve as a goodwill ambassador for analog. When I saw a positive writeup on it in the Crutchfield catalog, I figured the message was now getting through to tens of thousands of consumers who didn't even know turntables were still being made. Never mind that the best Crutchfield could do in the blurbs was to say they were "hard-presssed to tell the difference" between the TT-1551 and Marantz's SA 1151 SACD player.

As for Clearaudio's American importer, Musical Surroundings, the Marantz-Clearaudio collaboration probably didn't thrill them—until they realized that most buyers would otherwise never have heard of Clearaudio, and that the Marantz TT-1551 will serve as an introduction to the rest of the Clearaudio line. The upgrade possibilities are endless—and Marantz is footing the marketing bill.

**Halcyonics Micro 40 active vibration isolation system**

Last year, at the annual Expo of Custom Electronic Design and Installation Association (CEDIA), I was introduced to the German-made Halcyonics isolation platforms (www.halcyonics.com). The Micro 40, 60, and 80 are laboratory-grade (and look it) active isolation devices that have been pressed into audiophile service. Each uses eight coaxial piezoelectric accelerometers and electrodynamic actuators (motors) to provide more than 40dB of isolation at 10Hz and above, and more than 25dB of isolation as low as 5Hz (in both horizontal and vertical planes) for the component sitting on it. The platforms can support an astounding 220 lbs, and adjust to the load automatically.

The Micro 40's platform measures about 16" wide by 17½" deep by 5½" high, making it ideal for a small-footprint turntable. Unfortunately, it costs $7990. Being a scientific device, it comes with oscilloscope-like software you can load on your PC (but not on a Mac, so I didn't bother) to precisely monitor the unit's performance to lab standards. Or you can use it as I did: Put it on your stand, plug it in, and flip the On switch. Everything else is automatic.

Despite its high cost, I decided to test the Micro 40's effectiveness with turntables costing less than a quarter its own price. Only after auditioning the turntables atop my reference Finite Elemente stand (the first of which I purchased in Germany after spotting them at a hi-fi show in Frankfurt before there was an American importer) did I press the Halcyonics into service. The importer insisted that, with the power off, the Micro 40 would provide no isolation. However,
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Pictured above: Evolution 600 Monaural Power Amplifier (top), Evolution 402 Stereo Power Amplifier
knowing how critical what it sits on can be to a suspensionless turntable's sound, I decided not to chance the Micro 40's affecting what I heard, even with the power off.

The Michell TecnoDec, Roksan Radius5, and Rega P5 turntables all benefited from being placed atop the Halcyonics Micro 40, and in the same ways; when I turned the Micro 40 off, those effects instantly vanished. Seconds after I'd powered up the Micro 40 with a record already playing, I heard a dramatic change in the sound: the noise floor dropped away, leaving an unmistakable blackness. Images floated, standing out in dramatic relief against the black background; the soundstage's boundaries, previously vague and less definable, took on a solidity and clarity that were unmistakably more precise. These differences were similar to the ones provided by the air-suspension, compressor-powered Sounds of Silence Vibraplane. In fact, while I still owned it, I moved the Simon Yorke S7 turntable from the Vibraplane to the Micro 40, and heard similar improvements when I powered up the Halcyonics.

The Halcyonics Micro 40 works as promised, and for reasons that are not difficult to understand in the world of analog playback. The price is high, and it's impractical to consider using one with a $1600 turntable, but if you've spent big bucks on a table and it will fit on the Micro 40, I can reliably predict that you'll hear a major improvement—especially if the table has no suspension. How a suspended table will react remains an open question. I didn't try it this go-round, but I'd bet CD players and phono preamplifiers—especially tubed ones—would benefit from a ride on the Micro 40. Whether the improve-
ANALOG CORNER

I plugged the Manley Steelhead phono preamp into the 25-A Acrolink and made some recordings from vinyl using the Continuum Audio Labs Caliburn turntable. Then I made another set of the same recordings, this time with the Steelhead plugged into the Shunyata Hydra 8. When I attended the 2006 Consumer Electronics Show, I brought along a CD-R containing Roxy Music’s “Avalon” recorded each way, and asked people in various rooms to tell me which they preferred, or if they heard any difference at all. Everyone heard a difference, but which they preferred depended on the system used for the audition.

Back home, the Acrolink transformer made things sound somewhat deeper, richer, and more solid (though somewhat less open), but not profoundly so—I have good juice to begin with. At CES, in the warm-sounding rooms, people preferred the non-Acrolinked “Avalon” because it had more “detail,” while in the more “analytical” rooms they preferred the Acrolinked version for its “richer and more full-bodied” sound.

It’s important to remember that these sorts of accessories, along with cables and the like, are the spices of audio, not the main course. If I lived in a New York City apartment complex, I’d bet this isolation transformer would make a profound difference compared to what I heard here in the ‘burbs.

Acrolink isolation transformers
A while back, I received a 25-amp isolation transformer from Acrolink, a Japanese company that makes audio cables. The one I got came packed in a chassis the size of an enormous power amplifier, with two sets of duplex AC jacks on the rear. A device like this can isolate what's plugged into it from the outside world, but unlike, say, the Shunyata Research Hydra 8, it can’t isolate from each other two devices plugged into it; you don’t want to plug in both analog and digital devices.

Two new 15-amp Acrolinks are now available that are said to offer identical sonic performance to the 25-amp version and to each other: the single-transformer 6N-NCT 15A ($7750) and the dual-transformer 6N-NCT 30A ($10,500). With the latter, you can put your digital stuff on one side, analog on the other (but again, while the 6N-NCT 15A will isolate the gear from the outside world, it can’t isolate one component from another).

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—The Absolute Sound, avguide.com, October 2005
Whether or not it's $10,500 worth of difference is another question only you can answer.

**ATI buys rights to and improves RadioShack's analog SPL meter**

When RadioShack discontinued its Realistic analog sound-pressure-level meter, Audio Technologies, Inc. (ATI, www.atiaudio.com) stepped in and bought the rights to it. They improved the response of the built-in electret condenser microphone and now rate it at 32Hz–20kHz, ±2dB at 114dB. The new model, the SLM100 ($69), should be considered indispensable for reviewers and very useful for everyone else.

**Apple's iPod Hi-Fi**

Steve Jobs is to be forgiven for his hyperbolic introduction of Apple's new iPod Hi-Fi. At the launch, he claimed to be an audiophile who had spent so much money on his stereo that he was ashamed to reveal the amount at the press event, and that he was getting rid of it in favor of Apple's new $349 sin-gle-box solution. I don't believe him, but having spent weeks now with the iPod Hi-Fi, I understand his enthusiasm. Apple eschews individual credits, but the Hi-Fi was designed by a team headed by Victor Tiscareno, formerly of Audio Prism and Red Rose Music. It's aimed at a generation probably unfamiliar with the term hi-fi, not to mention sound that resembles high fidelity.

But the iPod Hi-Fi's sound did resemble high fidelity, starting with tuneful, articulate bass, thanks to an enclosure that's rigid, dual-walled, ported, and large enough to support real bass down to around 52Hz. What's more, the iPod Hi-Fi had rich mids and highs that didn't sizzle. It sounded sweet and musical, and could play loud without strain or compression.

Naturally, Apple haters and online gadget geeks didn't get it, or simply hated the iPod Hi-Fi, but as another goodwill ambassador for the hi-fi world it can't be beat, even if, at $349, it's been declared "expensive" by some mainstream writers.

But an iPod—even one loaded with MP3s—docked in an iPod Hi-Fi sounds better than a 1960s flip-down Sears Silvertone record changer. So don't despair—as long as there's access to the music, there's a great future for high-quality audio. Pass the electric Kool-Aid.

**A cure for scratched LPs?**

The Italian company Blue Note makes KYMYAS Hi-End LP Treatment, which it claims applies a microthin coating of polymer that "restores" LP grooves and removes static, and thus "cures" scratched LPs for up to six months. For $75 you get two bottles: the first contains a cleaning fluid, which prepares the record surface for the second liquid, the restorative coating.

I tried it on a moderately scratched record and the results were mixed. First of all, as Leonard Cohen once sang, "There ain't no cure" for love or scratched records—the scratches were still audible. However, after I'd recorded the LP twice on the Alesis MasterLink hard-disk recorder, first untreated, then treated, the Alesis's dBmeters supported what I thought I heard: The amplitudes of the impulses caused by the scratches were now significantly lower in level, making the record far more musically palatable, though the scratches were still annoying. In addition, even after a long drying period, a single play left a large ball of the polymer coating on the stylus.

If you have irreplaceable scratched records that you treasure, use this expensive stuff carefully and transfer the music to CD-R. Otherwise, fuggedaboutit!
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few of us felt that we were the proverbial voices in the wilderness for a long time.” So writes Gary Jacobson, whose Quad ESL website, www.quadesl.org, is my favorite of the many good ones out there.

Like other Quad mavens, Jacobson didn’t set out to become an authority on vintage loudspeakers. He was simply captivated by the first pair of ESLs he heard, and his enthusiasm only grew over the years, bringing him to an even more serious level of involvement. Today, Jacobson’s site is a clearinghouse for information on buying, maintaining, repairing, and using Quad’s original electrostatic loudspeaker, as well as selecting from among the half-dozen professional and semi-professional ESL restorers in the English-speaking world.

The subject of all that devotion is a remarkable product, to say the least. The ESL was conceived and designed by Englishman Peter Walker at a time when his firm, the Acoustical Manufacturing Company, had already succeeded with various models of Quad home electronics. (Quad was originally an acronym for Quality Unit Amplifier, Domestic.) But in the mid-1940s, Walker began to work seriously, if intermittently, on creating a practical full-range electrostatic loudspeaker, and in 1955 he unveiled a finished prototype, which wowed listeners at a number of live events.

Regarded from a purely technical point of view, the Quad ESL was extraordinary: a string of notable firsts bundled together in one product. Walker was fortunate to live and work at a time when various plastic films were just coming on the market; with them, he was able to overcome the diaphragm limitations that had hampered earlier attempts by other designers. But Walker was more than just an audio tinkerer who happened to be in the right place at the right time: He was a trained engineer who knew how to roll up his sleeves and hammer away at a problem until it cracked. And the last piece in the ESL puzzle—its unique constant-charge diaphragm system—came about only because Walker knew how to do “the maths,” as our English friends would say. Two years after its public debut, “Walker’s Wonder” became a commercial reality. For £52, the English audiophile of 1957 could buy a single Quad ESL, containing three separate push-pull electrostatic panels. At the core of each panel is a diaphragm of polyester film (12μm thick for the two bass panels, 6μm for the centrally mounted treble panel) coated on both sides with a soluble nylon variant called Calaton and sandwiched between two perforated sheets of PVC, themselves coated with a conductive paint. The latter two elements are the stators, which receive the split-phase music signal from the amplifier by way of an impedance-matching transformer; during use, the stators create a continuously variable electrostatic field that follows the amplified music signal, attracting and repulsing the charged diaphragm.

As conceived, the diaphragm and the front and rear stators in each electrostatic panel are held together with rivets—a quick and easy way of doing things, to minimize construction costs—and that assembly is held firmly in a hardwood frame, covered all around with a polyester film dustcover. (Walker discovered early on that the presence of dust exacerbated the lightning-like condition known as arcing, whereby voltages migrate from one stator to the other, burning the diaphragm and sometimes even the stators themselves in the process.)

Although the panels are flat when assembled, they assume a gentle curve when installed in the ESL’s open-frame enclosure, which is itself curved from top to bottom. The convex side faces the listener, thus enhancing the line-source tweeter panel’s propagation of high frequencies, while bipolar dispersion is inhibited by three layers of wool felt behind the treble panel and a flat lump of jute that’s stuck to the inside of the rear grille with a substance that appears to date from the reign of Edward the Confessor: The ESL was designed for use in smallish rooms, and Walker was smart enough to know that most owners would place them closest to rear walls and corners than was ideal. Apart from the enclosure and its three electrostatic panels, the ESL contains two other major elements. One is the HT or high-tension unit, which comprises a mains transformer (whose secondary provides more than 600V AC) and a rectifier block, the latter encased in epoxy or wax; the other is an impedance-matching audio transformer, the casework for which also contains an RC crossover network: The Quad ESL is, in fact, a three-way speaker. (Low frequencies are sent to the two bass panels, mids to the whole of the treble panel, and highs to the centermost strip of the latter.)

That’s a lot of speaker for £52—and I haven’t even mentioned its performance. By an informal count, the Quad ESL appears on more Ten Best lists than any other discontinued product, and I don’t think you can name another vintage loudspeaker that’s so widely admired, let alone relied on as a reference—let alone competitive with the best...
oftoday. The ESL has always been a pop-
ular thing: From the time of its intro-
duction until the day in 1982 when Quad quietly pulled the plug, more than $4,000 units were sold. And a lot of them made their way over here.

Quads & caveats
Late last year, I bought a pair of Quad ESLs on eBay. The seller found them at an estate sale in Nashville, and I won the auction with a bid of $660 (uncomfort-
ably close to the retail price of the beast, which contemporary theologians agree would be $665.95), plus shipping and handling. I thought it was a good deal until I saw how much I was being charged just to squeeze two panel speakers and a half-million Styrofoam peanuts into one makeshift cardboard carton: almost $200. If you're buying Quads from someone who doesn't have the original car-
tons and packing materials, brace yourself.

While I'm on the subject of caveats, here's another: Human nature being what it is, you can probably expect the worst. A few quotes from the eBay description:

"I have powered the speakers up with a Marantz amp, and got sound that was good but not as good as I believe the speakers can be."

"The grills are copper with a few dents and discoloration, but I believe the electrostatic panels have NOT been dam-
aged."

"Not sure of age but I would guess early 60's, that is only a guess!"

So much for Fantasyland. Reality was quite different. The treble panel on one speaker was completely dead (you'll find out why in a moment), and one of the bass panels on the other worked only intermittently. If that's the seller's idea of "good" sound, he must be an audio reviewer. The grilles were an endless maze of dimples and dents, and there was something growing on one of them that looked like the mold on blue cheese. But the seller had the date almost right: My pair turned out to be from 1959, the year Alaska and Hawai'i joined the union.

Still, when I tried them out, those cheesy-looking Quads had some of the selfsame qualities I'd come to expect from my previous ESL experiences. Voices—especially those panned toward the speaker with the working high-frequency panel—sounded uncannily real and there, even more so than with my much-loved Quad ESL-989 speakers. Seriously.

My eBay Quads deserved a new lease on life, but I decided to observe a strict cost limit: $2500 total, including the amount I'd already spent buying the speakers and getting them here. My rea-
soning: If I can get them to sound as good as the best ESLs I've ever heard for less than $2500—which is to say, just below the price one would pay for a brand-new pair of Merlin VSMs, Spendor SP2/3s, or other very good, very musical speakers—then the trip will have been worth it, and my eBay Quads will clearly be a towering value. Otherwise, as much as I might love them, they'd be little more than an exercise in audio nostalgia.

So with a nod of thanks and admira-
tion for the invaluable restoration information provided by Gary Jacobson—and other Quad ESL experts, such as Ken Kessler (author of Quad: The Closest Approach), Sheldon Stokes, Stewart Pen-
keth, Andrew King, Ron Best of One Thing Audio, Wayne Picquet, Mike Grubb and Randy Stringer of QS&D, my old friend Chris Beeching, and the great Philip O'Hanlon—let's get cracking.

The Visible Quads
An important tip, for safety's sake: There are very high voltages inside any electro-
static loudspeaker, and if you spend your lunch hour poking around inside an ESL that's still plugged in, you'll be having tea with your great-great-great-grandmother before the afternoon is over. That may or may not appeal to you, but it doesn't appear to the good folks at Primedia's legal department, who want me to remind you that this column is for entertainment purposes only: They are not responsible for the bad things that may happen to people who actually follow my advice. Primedia also wants you to remember that an unplugged ESL continues to hold a lethal charge for up to four hours.

Here's another tip, for practicality's sake: Buy some Ziploc bags for storing all the different screws and assorted lit-
tle bits, and label them assiduously. Using the serial numbers to guide you, keep the parts for each speaker distinct from one another.

Now then: Start by unscrewing the ESL's three spindly wooden feet from the bottom surface, then get ready to remove the front and rear grillework. Unfasten the curved wooden pieces—lovely things, really—that decorate the sides of the speakers, and you'll uncover a row of staples holding the rough edges of the front grille in place. Pry these out with a screwdriver or piers, then turn your attention to the bottom edge of the grille and the ten or so screws holding it in place. Remove them, and carefully pull the bottom of the grille toward you until the top portion is also freed: This curves away from you, its edge lodged in a groove behind the half-round molding at the top of the frame.

Unless you're very lucky, you'll see at least one major problem right off the bat: The ravages of arcing. The first speaker I uncovered was the one with the mold and the nonworking treble panel, and the damage was shocking. The treble panel had arced so badly that a hole the size of a nickel was burned into the front and rearstators. Clear through—as in daylight.

For now, simply note the damage and try to do a bit of gentle housecleaning as you go along. A slightly damp rag or a thoroughly wrung-out sponge will help you strip the decades of dust away from the dustcovers, enabling you to assess the damage a little bit better. (Don't be fooled by the dusty color of the woofer panels' dustcovers: Quad decided to paint them gray when it was discovered that the gleam of raw poly was visible through the grille. The treble panel's dustcover escaped that indignity owing to the fear that the weight of the paint would affect the high-frequency performance—and it probably would.) You'll be replacing all the dustcovers later on: It isn't hard to do, and if they're not torn already, the material is brittle enough by now that it could disintegrate any day.

Move on to the rear grille, which is a different matter altogether. Twenty-one wood screws around the perimeter hold the thing in place, as do two of the four largest bolts on the very bottom, whose main job is holding the transformer in place: The idea is to remove the former but merely loosen the latter. Now, put
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LISTENING

on some heavy work gloves—the edges of the grille are devilishly sharp—and start prying the bottom edge of the grille away from its moorings. Note that the flat expanse of the grille and the box-like cover around the internals are all one piece. Lift this completely away, then gently pull the three sheets of felt away from the rear of the tweeter panel, noting their position for reassembly. All are stapled in place using two extra strips of wood.

Next, heat up your soldering iron in anticipation of disconnecting the three electrostatic panels from the HT unit and the audio transformer. Start with the bass panel on the right (as viewed from the rear), and wedge a piece of cardboard between the terminal strip at the bottom of the panel and the panel itself, to protect the works from splashing molten solder. Use some desoldering braid to wick away the excess—you’ll be glad you did later on—and as you disconnect each wire, band it with a piece of masking tape and label its source and destination as clearly as you can.

Now, turning your attention to the other side, loosen and remove all four transformer bolts from underneath the frame while holding the trannie at least somewhat still, so it doesn’t bash into the panel. (This is tricky but doable. Thankfully, the housing itself is threaded, so you won’t have to worry aboutholding your nuts.) There should be enough slack in the wires exiting the transformer that you can at least flip it out of the way, giving access to the other panel’s terminal strip. Protect and desolder, as above.

You’re almost done with the soldering iron. Label the wires leading to the transformer and desolder all of them from the square terminal board except the pair of wires, one black and one white, leading to the nearest bass panel. Turn your attention to the HT unit, and desolder the thin (center) red wire, which goes to the treble panel. Unbolt the HT unit from the frame, and remove it and the transformer housing altogether. Label them.

Working from the front of the speaker now, remove the two central brackets—one up, one down—that hold the treble panel in place, and then the smaller upper and lower brackets that hold the bass panels on each side. In theory, the bass panels can now be removed—but they’ll almost certainly need some coaxing. Do that by inserting a paint scraper between a given panel and the inside edge of the enclosure frame, and twisting it gently.

With the bass panels out of the way you can now remove the treble panel as well—but watch out for the locator spikes! These are small, sharp, nail-point sorts of things that protrude from the two curved wooden struts that support the treble panel from the rear, and their job is to hold the panel securely. If you don’t know they’re there, you could snag the dustcover on one of them: Not a problem during disassembly, but a big problem when the new panels go back in.

Finally, use that paint scraper to remove the bits of dried-up weather stripping that remain on the frame, and clean and inspect the enclosure. It’s up to you whether it needs sanding and repainting or just a good scrubbing; I opted for the former. I also decided to refurbish the wooden side panels on my pair, so I started by removing their finish with a paste-type stripper, then sanded with 150-, 280-, and 400-grit sandpaper. Regardless of your decorating plans, before you put the ESL back together again, locate and tighten all the screws that hold the frame together.
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LISTENING

Quad is in the details
Time to take stock: You should have two bass panels, one treble panel, one HT unit, one transformer, one front grille, one rear grille, two side pieces, three feet, and several Ziploc bags filled with assorted parts. Actually, you should have all of that times two.

How bad does everything look? You can buy newly made side pieces and newly made feet—though the latter tend to be expensive, for some unquadly reason. The ESL’s transformers seldom fail, but the values of the eight resistors and three capacitors in the crossover network may have drifted by now—and besides, there are modern substitutes that offer potentially better sound: Let’s earmark those for replacement. Even if the wiring looks good, keep in mind that it must withstand very high voltages—and that technology, too, has progressed over the years. I say replace it.

The HT unit? Play it safe and assume the worst: Replace the rectifier block. (The mains trannie should still be okay.)

You already know how I feel about the dustcovers—replace them all—but take a close look at the stators and diaphragms within. Depending on your ESL’s age, you’ll probably find a few spots of carbon on the treble panels; if so, you should opt for fresh ones. Have them rebuilt if the stators are in good physical shape, or buy a newly rebuilt pair from one of the experts. Even if a treble panel seems to work, it may not be working optimally—and it’s almost certainly less sensitive than it was when new.

Bass panels are another matter: Arcing is much less common with them, because their stators are spaced a great deal farther apart than those of the treble panels. On the other hand, owing to the fact that the Calaton coating can shed over time, which can hinder the diaphragm’s ability to maintain a constant charge, you may want to have the bass panels rebuilt as well. (Those stators tend not to suffer irreversible damage—although you want to look closely at the rivet areas in particular, for evidence of arcing there.)

I decided to buy a fresh pair of treble panels for my own ESLs—as you can tell from the photos, the stators were too far gone to rebuild—and a fresh pair of rectifier blocks for the HT units, too. Those items are available from a number of sources in North America and the UK; I chose Wayne Picquet of Quads Unlimited in Longwood, Florida, whose panel rebuilds in particular are at the very top of many people’s lists. Wayne also supplied me with enough dustcover material to redo all four of my bass panels. And Philip O’Hanlon offered some spares of the high-voltage hookup wire and the crossover resistors and capacitors he’d bought for his own ESL project.

I decided to buy one more thing: a pair of Wayne Picquet’s protection circuits, designed to limit the amount of voltage that can reach the treble panels, thus minimizing, if not eliminating, future diaphragm and stator burnouts. Not everyone in the ESL community agrees that protection circuits are a good idea, but I figured I could always get rid of them if they foreshorten my soundstage or some such thing.

All right, then: The paint is drying on the frames. The shellac is drying on the side pieces. The mold is drying on the grillework. And the glue is drying on the new treble panels. Tomorrow I’ll put them back together, fire up the amps (just a figure of speech, I hope), and play a few records. Keep an eye on eBay now that you know what to look for, and next month we’ll pick up where we left off.

1 Very early samples, such as mine, had only one cap, but the crossover frequencies were changed after a while.

2 Contact Wayne Picquet at: wpkae87@aol.com.
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A Virtuoso Recital, an Amp, & a Speaker!

Were I trying to make a living by giving piano recitals, David Stanhope's new CD, *A Virtuoso Recital* (Tall Poppies TP135), just might tempt me to wash down a fistful of pills with a bottle of Scotch. The saving grace being that Stanhope seems to have enough things to occupy himself with in his native Australia. The risk of his showing up in New York City and playing a recital, thereby giving a lot of people existential crises and sleepless nights, seems remote.

Stanhope first came to my attention courtesy the nice folks at Stuart & Sons pianos (www.stuartandsons.com), whose innovative refinements of piano string-coupling technology I detailed in this column in the January 2005 *Stereophile* (Vol.28 No.1, www.stereophile.com/thefifthelement/105fifth/), in which I also mentioned several recordings made on Stuart & Sons pianos.

In due course I awarded David Stanhope Plays (Tall Poppies TP135) a nod for my 2005 “Records To Die For.” It has since stayed in the rack in which I keep CDs I use to evaluate equipment, most of which I also listen to for pleasure. Listening to Stanhope thunder away on Busoni’s transcription of J.S. Bach’s “St. Anne” prelude and fugue, I somewhat regretted my decision. I was fortunate not to live long enough to witness the proceedings verge on Gilbert and Sullivan. And of course, being solo Liszt, one is expecting great virtuosity for its own sake, the same way we enjoy Olympic gymnastics or platform diving: that is, without worrying about their greater significance. *A Virtuoso Recital* is indeed arranged like a live recital, with a curtain raiser, two substantial works in the middle, a jaw-dropper, and an encore.

The curtain raiser is Schumann's *Toccata* in C, Op.7. Not exactly my favorite musical genre, but I recognize that I am in the minority; perhaps, were I a former piano student rather than a former violin and voice student, I would feel differently. I don't know if the listener's leg is being pulled, but in his liner notes Stanhope claims that because the *Toccata*’s final chord calls for the stretch of a twelfth in the left hand, in order to avoid arpeggiating that part of the chord, he plays the left-hand top note with his tongue. How can he do that without knocking his head on the fallboard, I don't pretend to know. But I do have faith that it was not accomplished animatronically, or by editing.

Next up is the original piano version in a live recital, but in our age of hyper-hygienic, over-edited recordings, they might impair some peoples’ enjoyment. My advice: Learn from the experience. Get over it. Perhaps attending more live concerts would help.

I discussed this issue once with André Watts, who told me that when he was unhappy with one piece in a live recital that was being recorded for commercial release, rather than record an insert to be edited in later, he insisted on adding the piece to the next recital on that tour that was also to be recorded. He did this because he did not want to misrepresent an edited recording as a live one, and because he doubted that an insert could do justice to the overall architecture of that performance of the piece. So, with Stanhope, just as with some of the great old Nimbus “do it in one take” recordings, you gain originality but lose some minute degree of cosmetic perfection. Sounds good to me.

As will surprise almost no one, Stanhope selected the music on *A Virtuoso Recital* from the list of dreaded finger-busters. This is perhaps not always the deepest music, but I think there are times when we can enjoy instrumental virtuosity for its own sake, the same way we enjoy Olympic gymnastics or platform diving: that is, without worrying about their greater significance. *A Virtuoso Recital* is indeed arranged like a live recital, with a curtain raiser, two substantial works in the middle, a jaw-dropper, and an encore. Sounds awesome to me.

The first jaw-dropper is Liszt's transcription of the *Wedding March* and *Elves’ Dance* from Mendelssohn’s *A Midsummer Night’s Dream*. In his notes, Stanhope remarks that perhaps Mendelssohn was fortunate not to live long enough to hear it. One can imagine a cranky Liszt thinking, “People think this is good music? I shall reveal the insipidity that lies within!” Some of the distortions of the familiar melody and its rhythm should have you cracking up; at times the proceedings verge on Gilbert and Sullivan. And of course, being solo Liszt, it is a finger-buster, and Stanhope dispatches it with aplomb.

The encore (also a jaw-dropper) is the first recording of Stanhope’s own transcription of Sibelius’ song “The
"Tryst," and it is as fine a piece of late-Romantic keyboard swashbuckling as one could ask for. I suspect that its bodice-rippingly bombastic extravagances might not stand up to unlimitedly repeated listenings, but the pianists out there will be agog, for sure. Or giggling hysterically. (Violinist Arturo Delmoni’s reaction: “I’m speechless.”) Stanhope dishes out double handfuls of what, in another context, would be called power chords. His dynamic range is staggering. You really must hear “The Tryst.”

Just as Ivan Moravec’s performance of Brahms’ Intermezzo in A, Op.118 No.2, is my touchstone for artistic nuance in piano playing, the Sibelius-Stanhope “Tryst” is my new touchstone for pedal-to-the-metal technical virtuosity and raw power. (In researching this piece, I discovered that Sibelius’ first language was Swedish, and that the few of his songs that are not in Swedish are in German. Hunh. Huedathunquet.)

In short, Stanhope’s A Virtuoso Recital is a great pianism-showpiece album in excellent sound. The Rachmaninoff Preludes go a long way toward offsetting the “empty calories” pieces, and Stanhope’s Sibelius transcription is a treasure. Highly recommended. (Exhibitors at this month’s Home Entertainment 2006: take note.)

I THINK THAT THERE CAN BE NO ARGUMENT THAT $4000 IS A FERTILE PRICE POINT FOR BOTH AMPLIFICATION AND A PAIR OF SPEAKERS.

I THINK THAT THERE CAN BE NO ARGUMENT THAT $4000 IS A FERTILE PRICE POINT FOR BOTH AMPLIFICATION AND A PAIR OF SPEAKERS.

$40,000/pair loudspeakers, and I believed they would benefit from learning about ESP’s entry in that field. However, I also cheerfully acknowledge that, according to Stereophile’s survey data (adjusted for inflation), the average...
The reader has about $15,000 invested in his or her two-channel system. Opinions differ about how best to allocate the total budget for a stereo system, but I think that there can be no argument that $4000 is a fertile price point for both amplification and a pair of speakers. This time out I discuss worthy contenders near that price in both categories.

Audionet is a German company I first became aware of from hearing my friends at loudspeaker builder Wilson Benesch talk about how impressed they were with Audionet's electronics. They were so impressed that Wilson Benesch undertook to become Audionet's UK importer and distributor. I got in touch with Audionet's US representatives (www.audionetusa.com), who in due course sent me an evaluation sample of their SAM V2 110Wpc integrated amplifier. The SAM V2's suggested retail prices begin at $4400 and go up, depending on options.

The $100Wpc solid-state integrated amplifier (or, in the case of Magnum Dynalab, receiver) is a product that I think in many cases can offer an optimal blend of performance and price to the listener who wants to stop obsessing about equipment and just get closer to some music.

The SAM V2 is 17" (435mm) wide, 3.75" (95mm) high, 14" (360mm) deep, and weighs about 35 lbs (16kg). Its construction quality is very good. The faceplate is the usual 9/32"-thick solid aluminum, nicely machined. What is unusual at this price is that the rest of the cabinetwork is machined stock rather than bent sheet metal. Rear-panel RCA jacks are lugged on, rather than pass-through circuit-board mounts. Speaker terminals are of high quality and EC compliant. Industrial design and fit and finish are excellent at the price. To use two competing units as benchmarks, the Audionet SAM V2 is priced close to the Plinius 9200, but its build quality approaches that of the much more expensive Jeff Rowland Design Group Concerto.

Options include a remote control, a phono module for moving-magnet and moving-coil cartridges, and a DAC module with sampling rates of 32, 44.1, 48, 88.2, and 96 kHz at word lengths of up to 24 bits. The review unit was in silver finish with black lettering and blue display. Black metalwork with white lettering, and a red display, are also available.

There are six standard inputs. If the phono module is fitted, it takes over Input 1. Inputs 2–5 are assignable, as the SAM V2 is microprocessor-controlled. Input 6 is half of a recording loop and is paired with the Record Out jacks; when Input 6 is selected, Record Out is muted, to avoid potentially disastrous feedback from inadvertently recording itself.

The rear panel also includes two RCA S/PDIF digital inputs for the optional DAC module (selecting these as inputs requires use of the remote control). A standard 1/4" headphone jack is on the rear panel, where preamp outs are also provided; a rear-panel IEC inlet allows the use of aftermarket power cords, and a master On/Off switch is adjacent. For regular operation, there is a standby/operate button (marked Power) on the front panel.

The front panel also includes a Set button for selecting menu options, a large fluorescent-display window (brightness is adjustable), and two rotary knobs. The left-hand knob...
selects among the six standard inputs, the right adjusts volume. Both knobs are indirect in operation: they give instructions to the microprocessor, which in turn operates relays or a motor-driven ALPS volume control.

Setup was a breeze, during which it became apparent that the SAM V2 has been very well thought out. Pushing the Power button rouses it from sleep (the display reads “WAKING UP”). The microprocessor control even checks to see if your wall current is in reversed polarity, in which case it displays a warning. The microprocessor also monitors temperature, overload conditions, the presence of DC, and HF oscillation.

I went directly from listening to the $18,181.81 darTZeel NHB-108 Model One amplifier, Stereophile’s “Amplifier of the Year” and “Joint Product of the Year” for 2005, to the $4400 Audionet SAM V2. I might have expected to be crashingly disappointed, but was pleasantly surprised to discover that the Audionet was not that far away from the darTZeel in essential sonic character, with enviable imaging and dynamics and very impressive bass control.

It may be jumping to a conclusion, but perhaps the sonic similarity was accounted for by the fact that, like the darTZeel, the Audionet has only two output devices per channel and an unusually hefty power supply. But there is no free lunch, and I must admit that, as fine-sounding as the SAM V2 was, it just couldn’t match the more-than-four-times-as-much darTZeel’s refined sweetness in the treble and overall tonal lusciousness. Still, the SAM V2 sounded neither spare nor lean but rather creamy, perhaps even “tube-like,” and its dynamics were excellent. The SAM V2 was able to push the ESP Concert Grands to greater-than-concert levels with David Stanhope’s performance of Sibelius’ “The Tryst” without getting congested or raucous. The casework got moderately warm when the amp was pushed hard, but not to a degree to cause concern. Turning the SAM V2 all the way up on Sunrise, from Richard Strauss’s Also sprach Zarathustra, created a most impressive imitation of a Saturn V rocket launch. Bravo.

The Audionet SAM V2 integrated amplifier’s pros: sophisticated sound, great dynamics and bass, excellent build quality at the price, options allowing for great flexibility, solid value for money. Its cons? None that I can think of.

THE TEMPO IVs’ ABILITY TO CREATE THE CONVINCING ILLUSION OF A SOUNDSTAGE LIVED UP TO THE FOLKLORE ABOUT MICHAEL FREMER’S WATER-HEATER REPAIRMAN.

Audio Physic Tempo IV loudspeaker: $3995/pair
Audio Physic’s Tempo IV loudspeaker is a handsome, slim floorstander with a suggested retail price of $3995/pair (www.audiophysic.com). Its cabinet design is unusually sophisticated for a speaker at this price. Over and above the faultlessly applied, high-quality, bookmatched cherry veneer, the 39" tall cabinet is raked back 7" to time-align the midrange unit and tweeter. The cabinet sides gracefully flare in and out in asymmetrical arcs from front to rear and meet at the rear panel, which is flat and parallel with the front panel. The rear and top panels are veneered as well. The rear panel includes the terminal block, which includes high-quality single binding posts and is mounted on a compliant suspension to minimize the influence of structure-borne vibrations on the crossover. The rear panel also includes a moderately large, flared port. Nominal impedance is a claimed 4 ohms.

Near the top edge of the front panel is mounted a conventional soft-dome tweeter (not a ring-radiator, as found on some other AP models) and, immediately below that, a 5" metal-cone midrange, the sides of its basket cropped to allow the front panel to be as narrow as possible. The rest of the front panel is empty, save for an unobtrusive logo badge close to the bottom. One particularly welcome and sophisticated touch is that three of the bolts that hold the midrange to its compliant suspension are also the mounting points for the front grilles, which cover only the midrange and treble drivers. Neat! This avoids the unsightly appearance, when a speaker’s grilles are removed, of the receptacles for the usual plastic grommets. (I listened with all the grilles off.)

Each side of the Tempo IV holds a 7" bass driver positioned close to the floor, apparently to minimize the Allison Effect: irregular bass reinforcement and cancellation from floor reflections. These drivers are mounted back to back and wired in positive...
man. That chap walked right past the Audio Physic Virgos Michael had just played a Roy Orbison track for him on, thinking that the panel speakers behind them were the sources of the music—some speakers really can “disappear.” I believe a quote from the repairman featured for some time in Audio Physic’s US advertising. (See Stereophile, September 1995, Vol.18 No.9, p.121; www.stereophile.com/ floorloudspeakers/147/)

My initial setup was with the Audionet SAM V2 integrated amplifier driving the Tempo IV’s, the speakers at the 3/4 points of the room’s width and about 7’ from my listening position, toed in so that their cabinet sides were not visible. I felt there was an unquestionable excess of energy in the range of the middle of the violin’s E string and upward (about 1320Hz and up). This caused the overall presentation to be a bit too intense. I had intended the setup to have adequate breathing room, but even with the Audionet’s ever-so-slightly zaftig contribution, the sound was far too forward.

Audio Physic’s US importer, Gabby Amram of Soundquest LLC (212-731-0729), revealed to me the error of my ways. The Tempos are designed to be listened to positioned rather far apart, close to the sidewalls, and not toed in at all. Ah. Moving things around as suggested resulted in a smoother treble balance, a more relaxed overall sound, and a much wider soundstage.

Midrange textures were still on the light and agile side of the ledger, and the bass was ample but well integrated.

In essential sound, the Tempo IV is an interesting contrast to Spendor’s S8e ($2995/pair), the last speaker in that general price tier that passed through here. The S8e delivered an updated version of the traditional, polite, British studio-monitor sound. The Tempo IV is more of a crisp, clear Riesling to the Spendor’s velvety Châteauneuf-du-Pape. If the Spendor S8e strikes you as insufficiently detailed and lively, the Tempo may be just the ticket. Given the $1000 difference in their prices, I think that both speakers are cases of getting what you pay for.

To sum up the Audio Physic Tempo IV: Pros: Lively timbres, detailed and dynamic presentation with superb imaging, handsome looks, excellent design and build quality. Cons: Careful attention to setup and associated equipment required to prevent this speaker’s virtues from turning into vices.

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THE PIANIST REFUSES TO WASTE TIME recycling the groundbreaking tunes he wrote more than four decades ago, or complaining about the lack of attention his singular compositional style has received over the years. While his lung cancer is currently in remission, the 68-year-old Hill says that he's had to “adapt to living with a terminal illness. Right now, I'm focusing on quality, not quantity.”

That sums up his latest recording, Time Lines, released by Blue Note, which, remarkably, has brought Hill back into its stable for the third time. "I don't believe in a hope chest of music," says the innovative, New Jersey-based jazz legend, still relatively unknown outside the inner circle of jazz aficionados. "This is all new music that I've written over the last couple of years, so none of it is old-fashioned or outdated.”

Indeed, once again, Hill is riding ahead of the curve with his melodic convolutions, jaunty irregular rhythms, and angular harmonies that are as much conjured as played. Darkness may intrude, but brightness abounds on Time Lines, an album that Hill describes as deliberately “not forceful.” He adds, with a slight stutter that is reflected in the rhythmic hesitancy of his music, “One of the aims was to come up with a recording that a person could listen to over and over again.”

While Hill was dubbed “the next Thelonious Monk” by Blue Note cofounder Alfred Lion when he first signed the
pianist in 1963, Hill is no heir apparent to Monk, as many people seem to want to believe. Hill plays serrated and fractured chords, serves up crossing and converging rhythms, obliquely swings surprises around every corner, and confounds listeners trying to fathom which parts of a piece are composed and which are improvised. But Monk he’s not. Hill is an original.

Andrew Hill grew up in Chicago, schooled himself in the music of the many unknown pianists the city offered, and then was exposed to recordings by Bud Powell and Monk—who, he says, “sounded natural to me. I heard ‘Round About Midnight and found that the way he played was logical.” But Hill didn’t emulate. “Most music schools say that it’s best to start out by imitating others,” he says. “But I believe you have to develop a creative approach to find your own style. You have to figure it out yourself. When I was younger, I’d ask older jazz musicians for suggestions and they’d tell me things they learned, which was information I may have used or never used.”

Saxophonist Greg Osby says, “It’s unfair to Andrew’s many contributions and importance as an artist that he is constantly dismissed as being a Monk and [Herbie] Nichols descendant/immitator simply because they preceded his emergence on the jazz scene.” Osby was introduced to Blue Note during his stint in Hill’s band during the pianist’s second tenure with the label, which resulted in the albums Eternal Spirit (1981) and But Not Farewell (1990). Osby says that it’s as if Hill “is cursed for being born late, which is a copout by folks who possibly aren’t listening deeply enough or don’t truly realize how heavy his music truly is.”

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At Birdland in New York in early March, Hill and his quintet began the evening with an expansive journey through “Time Lines,” laying the groundwork for the rest of the set, which featured Hill’s stutter-step piano progressions, colist comping, sweetly dissonant chords, and confidently angular mindset. A glowing musical alchemy was at work in which all members of the band, including bassist John Hebert and drummer Eric McPherson, played with lyricism and mystery, subtle power and quiet joy.

In commenting on the seamlessness between composition and improvisation on Time Lines, Bruce Wolosoff, a classical composer who studied with the late jazz pianist Jaki Byard, says that Hill’s improvisational genius lies in the way he “takes his thematic elements seriously and works with them throughout a piece”—unlike in most solo breaks, in which improvisers play off harmonic structures and chord changes. Wolosoff says, “It’s as if the beginning of a piece establishes certain ‘rules of inference,’ a grammar or syntax that defines the world of the piece, and he remains true to that logic, improvising in the same language that was established in the theme.”

Wolosoff goes on to say that this “establishing of mood” gives a work unity. “The risk and the challenge is in finding variety as the work is evolving and creating a narrative. It’s as if they’re characters in a play, and Hill remains faithful to them, letting them stay on stage for as long as it takes to tell their story.”

Young Blue Note pianist Jason Moran, another Byard protégé who considers Hill a mentor, says that he associates Hill’s improvisations “with shards of colored bebop glass.” Moran is attracted to the way Hill moves rhythms. “[His] comping style is also one of originality. Where he places a chord on the piano, on what beat, and how he uses his ‘inner voices’ within his hands to voicelead, is superb.”

Moran first heard Hill’s music when he was a junior in high school, and a bassist asked him to perform at his senior recital. The senior chose Hill’s “Refuge,” from his 1964 Blue Note masterwork, Point of Departure. “I remember loving the melody and then hearing Andrew break into his solo,” says Moran. “A couple of bars in, just as I thought I had him pegged, the floor fell through as he started to shift the rhythm on this uptempo waltz. I was hooked. I could not figure it out. It wasn’t Monk, it wasn’t McCoy, it wasn’t Herbie, who were the people I was into at the time.”

WOULD SHOW DRAMATIC PEAKS OF CURIOUSITY IN HIS EXPLO- RATIONS FOLLOWED BY SHARP DIPS OF AUDIENCE APATHY, WITH LONG PERIODS OF ABSENCE FROM RECORDING. FOR EXAMPLE, OTHER THAN A FEW UNDER-THE-RADAR RECORDINGS, HE WENT LARGELY MISSING IN ACTION BETWEEN BUT NOT FAREWELL (1990) AND HIS REEMERGENCE, WITH DUSK (2000), ON THE INDIE PALMETTO LABEL.

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However, Hill did rub shoulders with one great, Charlie Parker, who put together a pickup band for a dance at the Greystone Ballroom in Detroit in April 1954, when Hill was 16. In a recent interview with New York Times jazz critic Ben Ratliff, Hill said that, during a casual chat, Bird gave him a nugget of wisdom: “I look at melody as rhythm.”

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Ratliff said, "It was a stray comment, but for Mr. Hill it led to a long preoccupation."

Like many jazz musicians from the Midwest, in 1961 Hill moved to New York City. There he hooked up with multi-reedist Roland Kirk, and became singer Dinah Washington's accompanist. His time with Kirk took him to Los Angeles, but he returned to New York, where he caught the attention of Blue Note's Lion.

"Alfred was very generous to me," says Hill. "He made it economically easier for me. I didn't have to worry about gigs, and he let me record my own compositions with no timetable. He gave me money and nurtured my skills." Hill first recorded for Blue Note from 1963 to 1970. Highlights included his auspicious, avant-leaning debut for the label, Black Fire—with a stellar band comprising tenor saxophonist Joe Henderson, bassist Richard Davis, and drummer Roy Haynes—and the brilliant Point of Departure (1964), featuring Henderson, Davis, trumpeter Kenny Dorham, alto saxophonist Eric Dolphy, and young drumming sensation Tony Williams. All of Hill's recordings from 1963 to 1970 were recorded at Rudy Van Gelder's studio in Englewood, New Jersey.

In addition, the prolific Hill recorded several albums that were never issued by Blue Note during the 1960s, including Passing Ships. Hill's nonet for that 1969 date comprised Joe Farrell on various reeds, trumpeters Dizzy Reece and Woody Shaw, Bob Northern on French horn, trombonist Julian Priester, Howard Johnson on tuba and bass clarinet, bassist Ron Carter, and drummer Lenny White. Originally produced by Blue Note co-owner Francis Wolff and produced for reissue by Michael Cuscuna, Passing Ships was finally released in 2003. It was one of that year's most critically acclaimed CDs.

Cuscuna was instrumental in getting Hill back into the Blue Note stable on the pianist's second and third go-rounds, producing all the records, including Time Lines. He says the key to appreciating Hill's music is to "give yourself over to being drawn into his world." As a youngster, Cuscuna trusted the Blue Note brand, saving his lunch money to buy a new album each week. While he resisted the rising wave of avant-garde jazz in the early '60s, he took a chance on Hill's debut after reading a glowing review by Leonard Feather. "I was totally drawn into Andrew's playing," he recalls, "because I couldn't separate the writing from the playing. To me, it was a whole new way of thinking.

**Black Fire**
Andrew Hill, piano; Joe Henderson, tenor sax; Richard Davis, bass; Roy Haynes, drums
Blue Note RVG Edition 5
Alfred Lion, orig. prod.; Michael Cuscuna, reissue prod.; Rudy Van Gelder, eng. (both). AAD. TT: 51:52
Performance ****
Sonics *****

Hill's first album, Black Fire, stands the test of time as a compelling document of original voice and vision, with a quartet featuring Joe Henderson, Richard Davis, and Roy Haynes. The title track is a joyful exercise in unpredictability and tilted mirth on the piano. Inaccurately pegged as avant-garde but accurately described as being out of step with bop, this recording opened the door from which emerged Hill's idiosyncratic piano and compositional identity.

**Point of Departure**
Andrew Hill, piano; Eric Dolphy, reeds; Joe Henderson, tenor sax; Kenny Dorham, trumpet; Richard Davis, bass; Tony Williams, drums
Blue Note RVG Edition 90072 (CD). 1964/1999
Alfred Lion, orig. prod.; Michael Cuscuna, reissue prod.; Rudy Van Gelder, eng. (both). AAD. TT: 57:20
Performance ****
Sonics ****

After being out of the recording loop for a decade, Hill returned with Dusk, his debut on Palmetto—a sextet outing featuring oblique, whimsical, dissonant, lyrical compositions that double as improvisational playgrounds. "Ball Square" bounces along in wobbly carnival-like motion, "T.C." lushly mourns the death of saxophonist Tom Chapin, "15/8" crazily skips through time and time signatures, and the hushed "Tough Love" captures Hill in a rapt state of solo musing.

—*Dan Ouellette*
about creating music. He had his own universe and sound."

When rock music shook the foundations of jazz in the 1970s, Andrew Hill seemed to disappear from the scene. Cuscuna says that Hill always managed to survive, whether performing solo piano concerts in upstate New York or, later on, playing at public schools and prisons on the West Coast, and securing a teaching job at Portland State University, in Oregon. But he never sold out. "No one ever said that creative music would make you rich," says Hill. "No one ever said it would support you. You play the music because you love it, and that's enough in itself."

Greg Osby, who considers it a great honor to have been asked to join Hill in the studio during his second term at Blue Note, says that Hill instilled in him much wisdom. "Andrew is an artist of immensely high principles," he says. "He is a firm believer in truth in craft and the use of art as a mirror of one's true ideals and aspirations." He says that Hill occasionally telephones him to voice his encouragement: "He leaves his messages of approval that I have not, in the face of many enticements, done recordings, guest appearances, or live projects that have diminished my artistic integrity, or that I have reduced myself to being one who simply panders to those who just want to be 'entertained.'"

That Hill has not compromised his own art has perhaps contributed to the overall lack of appreciation for it. Unlike the compositions of Thelonious Monk, some of which were already considered standards by the end of the 1950s, and have become a hallowed part of the jazz canon since his death in 1982, Hill's tunes are rarely covered. Cuscuna notes that at certain junctures Hill was frustrated by having a difficult time "finding qualified people who could interpret his music." Cuscuna points to the dearth of "brilliant musicians" in the 1970s, which he says hurt Hill.

Today, that seems to be changing. Nels Cline, an out-leaning, experimental jazz guitarist who is also a member of Wilco, recently recorded a project that celebrates Hill's music—with a sextet that includes his Nels Cline Singers trio of bassist Devin Hoff and drummer Scott Amendola, augmented by clarinetist Gen Goldberg, keyboardist Andrea Parkins, and 71-year-old cornetist Bobby Bradford. (The album will be released this fall by Cryptogramophone Records.) When he conceived the sessions, Cline was thinking only of honoring "a criminally overlooked" musician. "I didn't realize that Andrew was experiencing a resurgence, that he was recording a new Blue Note album, or that he was ill," he says. "I'm not an Andrew Hill scholar by any means, but as I relistened to his music, I wanted to celebrate his original music. It's free, but it's structured. It swings, then it doesn't. It's modal but not modal."

Cline says he "runs the risk of being a pretentious idiot" in interpreting Hill's music, but hastens to note that his goal was to be sincere and honorable throughout. Yet, he says, the band does take liberties. "We opened the tunes up, so that it's more of a free-jazz approach. For example, we turn Bobby loose and let him play. There's electricity and electronics that you don't hear in Andrew's music but is natural to us."

The third time's the charm, says Hill, who points out that he's "come full circle" in his relationship with Blue Note. "I really started there, and I may end there." He notes that working with the straight-up but adventurous trumpet Charles Tolliver, who appeared on Hill's Dance with Death (1968), is also a reunion. "When I took my quartet to Birdland a year ago, I thought about Charles, who I hadn't heard play in years. I figured, you never know what you get, so I asked him to join us. As it turns out, we realized we can go into a lot of different directions with Charles."

In his early albums as a leader, tenor saxophonist Greg Tardy was lukewarm. But he stars on Time Lines (as he did on Hill's Dusk), evidence that he's blossoming under the eye (and ear) of the elder. His dark-toned notes and urgent wails are soulful throughout the new disc. "Greg keeps on improving," says Hill. "Normally I don't keep using someone over time, but he's doing different things at different times. He doesn't play the same from date to date, plus he..."
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can bring the clarinet and bass clarinet to the set along with the tenor saxophone."

While Hill notes that *Time Lines* has a harshness, the accent is on subtlety. "I'm more into pulling people along into the music instead of jerking them in," he says. He also notes that the recording itself deals with the whole concept of time, whether the layering of different rhythms—such as playing rhythms of 5/4 and 4/4 against each other to create a forceful drive—or revisiting the same tune several times.

"Ry Round" gets taken for two spins, recorded a week apart. "This shows what happens with improvised music when you change your focus," Hill says. "Of course, you don't want to play the same tune over and over again—call it to death—because then you play it by rote." Likewise, the melancholic and heartfelt "Malachi" (composed for the late bassist Malachi Favors) is played first with full band, then reprised at the end as a moving piece for solo piano. "That was Michael's idea," says Hill. "It shows the versatility of the tune, with one version open as a solo and the other closed. The solo piece ends the CD on a lovely note."

Michael Cuscuna agrees. He also points out that, while Hill's music has been characterized by constant change over the years, it's all identifiable. Each view introduces a new facet of his creativity. "When I first heard the new material that Andrew was working on for *Time Lines*, I was knocked out," says Cuscuna. "I was excited by how different it sounded from his earlier work. But you can also trace the lineage back to *Point of Departure*."

Still, there's that question of having been invisible for so many years. Hill has neatly put it all into perspective. In the 1980s, he tended to the needs of his wife, organist Laverne Gillette, who was in hospice (she died in 1989). "Sometimes you have to focus on other things," he says. "I decided to take care of Laverne's needs. I put the music behind me and assumed responsibility for her." As for his music being overlooked, Hill, generally a man of gentle voice, bristles. "I don't embrace those thoughts," he says. "I don't feel like I was overlooked. I have no regrets. I live off the generosity of my royalties. I feel I'm obviously blessed. I feel I've always been supported."

Cuscuna marvels at Hill's upbeat spirit, given that his days are numbered. "Andrew sees more work ahead of him. He keeps pushing forward."

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blame Jack Black.

Okay, not Jack Black personally, but whichever
High Fidelity screenwriter came up with the prod-
uct placement disguised as a cultural signpost dis-
guised as character development that was the
film's “Belle & Sebastian Scene.” You know the
one: the Scottish indie-pop band's “Seymour
Stein” is playing in the record shop, at the behest of skinny,
effete, fanboy clerk Dick. Enter Black as Barry, an obnox-
ious ball of punk-rock id. “It sucks ass,” he proclaims. Later,
he describes B&S as “old sad bastard music.”

The scene has become so inalterably associated with the
Scottish septet that it's a cliché to even start this story with it.
But all those other stories treat the “Belle & Sebastian Scene”
as received wisdom. Old sad bastard music, yeah, that's what they
are. But we like their brainy mellow indie chamber music anyway.
After all, we're rock critics! Meanwhile, Belle & Sebastian stories
of more recent vintage opt for conventional wisdom: that
The Life Pursuit, the band's sixth and latest full-length album,
continues a new phase that began with 2003's Dear
Catastrophe Waitress, produced by Trevor Horn.
Wrong and wrong.

As far as I'm concerned, Belle & Sebastian have always
been a band that fucking rocked. I don't use those words light-
ly. While even frontman Stuart Murdoch acknowledges that,
with The Life Pursuit, “We've made a record that is pretty
chunky for a change,” their music has always been dynamic,
and their increasingly frequent live shows a gregarious good
time. What has most defined Belle & Sebastian is not their enigmatic image—"a monk, planting potatoes and praying constantly," Murdoch acknowledges, tongue in cheek—but sound, aesthetics and musicianship. The little Scottish combo that began as a university class project, making their first record, *Tigermilk* (1996), in three days for very little money, is now accomplished enough to play with the L.A. Philharmonic (they’re scheduled to team up at the Hollywood Bowl on July 6).

It’s understandable that people might assume the presence of Trevor Horn, famous for producing everyone from Frankie Goes to Hollywood to ABC to Seal, made *Dear Catastrophe Waitress* a more bombastic record. That’s not precisely so, says Murdoch. "Trev came up and saw us and saw that we could all play and that most of the arrangements were in place. He really just wanted to get microphones on us." The same went for Tony Hoffer (*Beck, Air, Mercury Rev*), who produced *The Life Pursuit*. "This record was simpler and even more live. Everybody wanted to produce a record of the seven members playing, and because we gave ourselves that restriction, we’ve come up with a much more solid record."

"We’re kind of better organized these days," continues Murdoch. "We’ve had a natural coming-together process, right up to this day, of being comfortable with each other. The way I write songs now is very different. I can wake up with a song and I can hear the song finished, [with the sound of] the group playing. It’s only because they play so well now that I can hear it like that."

In that sense, Belle & Sebastian are an object lesson in how aesthetics are a product of circumstance. If you have only a few days and a few hundred pounds and a band that’s been together only eight months, you’re going to sound a certain way. If you have money and Trevor Horn and a band that’s been together 10 years, you sound a certain way. But that doesn’t mean you made an ideological choice to become polished any more than you made one to be rough.

And Belle & Sebastian were polished perfectionists from Day 1. They did it themselves—but did it well. They believed that anyone could play an instrument (and more than one), but they had to be able to play it. Belle & Sebastian are about beauty, not sweetness. They can be arch and clever, but also laugh-out-loud ridiculous—when they played a gig at London’s Royal Albert Hall, they planted two old men in the back balcony to imitate Waldorf and Statler from *The Muppet Show*. And sure, some are bound to find them overly tasteful—but what’s wrong with having taste?

O

Belle & Sebastian on the last day of their most recent US tour, pay a visit to the local college radio station—but this local college station is heard around the world. Apparently Murdoch himself has been known to check out KEXP. The Seattle station has joined—and, by indie-rock standards, far surpassed—Santa Monica’s KCRW as an American equivalent to the BBC’s late John Peel, specializing in live on-air sessions.

As the seven members of the band—Murdoch, Stevie Jackson, Chris Geddes, Sarah Martin, Bobby Kildea, Mick Cooke, and Richard Coburn (don’t ask what instrument each plays, because it changes almost every song), plus cellist/percussionist Sarah Wilson—set up in a mostly acoustic configuration, DJs, staffers, interns and their lucky friends begin to huddle in the engineering booth. One woman titters over the fact that when she walked into the station, Jackson was right there in the parking lot, whistling and strumming his guitar. Another simply verbalizes her big crush on Murdoch, now separated from her by mere panes of glass.

Outfitted in a denim jacket and a stripy shirt—this being Seattle, and Murdoch being a Scot, he’s also got a short khaki raincoat close at hand—he leads the band through "Century of
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Sonus faber
Amati
anniversario

Available in "Red Violin" (right) or "Graphite" (left) finish only at select Sonus faber dealers.
Fakers," a song from one of B&S's classic trio of EPs (see sidebar). "Omigod," a volunteer named Janice says, her hand over her mouth, "I am geeking out." When the song is over, the studio is so quiet you can literally hear the sound of your trusty Stereophile correspondent's pen moving across paper.

This reverence and reserve, the shrinking-violet quality of the band's devotees, the way they feel so privileged to be only six feet from greatness, can seem a bit much. In many ways the band's image has nothing to do with their music and everything to do with their fans. But let me tell you something—I was at the Bowie Weekender in 1999, the precursor to All Tomorrow's Parties festivals that B&S headlined with the likes of Mogwai and the Flaming Lips. The place may have been full of swoony kids with cute backpacks full of 7" singles, French poetry and children's books, but they still knocked back eight pints of lager and pogoed hard to the band's cover of "The Kid's Are All Right." Plus I guarantee you most of them got laid that evening. Rock'n'Roll!

In any case, there's no reason for those who buy into the lifestyle choice to deter those who just want to dig the music, whether you're talking the Grateful Dead, the Wu-Tang Clan, Fugazi, or Belle & Sebastian. Besides, there's something to be said for the Belle & Sebastian mystique. Yes, it's all a bit precious, but it's also precious—as in

Believe & Sebastian

I'd Rather Listen to Thin Lizzy-O: The Best of the B&S Discography

Tigermilk (1996)
This is the 1000-copy, vinyl-only, three-day student project that began it all: Scottish indie-pop with no trace of no-fi or a single shambling performance. "It was a fantasy," says Stuart Murdoch. "Complete romance. I was walking a meter above the pavement for a month afterwards!"

Indeed, when the very first song ("The State I Am In") on your very first record remains a signature composition 10 years later, you know you did something right.

If You're Feeling Sinister (1996)
Belle & Sebastian's first "proper" release came out in the US on short-lived boutique major The Enclave; a track-for-track live version, recently issued via iTunes, was accompanied by the implication that the band is now more capable of capturing the nuanced sound in Murdoch's head. "We'd only really got together as musicians nine months earlier," he says of the first time around. "I wanted it to be like Court and Spark or Tapestry, but those dudes had been together forever."

Highlights? Every one of these 10 songs is a classic.

Push Barman to Open Old Wounds (2005)
You might be a Belle & Sebastian geek if you've uttered the following sentence in a knowing and conspiratorial tone: "The three EPs—Dog on Wheels, Lazy Line Pointer Jane, and 3...6...9...Seconds of Light—are really the best album." Murdoch claims to be surprised by this assertion, but understands the sentiment. "We were in a good time when those EPs were recorded," he says. All were released in 1997, right on the heels of If You're Feeling Sinister. "It was still a honeymoon thing for the group. Also, I managed to put some concentration into the small packages and make it right, whereas with some of the LPs it was a longer, wilder process that got out of hand."

Push Barman compiles the 12 songs on those three EPs, plus the 13 songs of four more EPs, released between 1998 and 2001: 25 tracks in all, from the boy/girl rush of "Lazy Line" and the Hullabaloo soul of "Legal Man" to a pre-Tigermilk demo of "The State I Am In" and the song that gave the band its name. Push Barman actually adds up to two of Belle & Sebastian's best albums—Jason Cohen
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“rare.” They don’t come around that often, and there aren’t any other bands quite like ‘em.

“It’s a kind of small thing to be proud of, the fact that we’ve lasted,” says Murdoch. “We’re still trying to make better records, still trying to do something good. It’s a tricky business.” He remembers reading about how Robert Altman gave a film-school lecture, sometime in the 1970s or ’80s. “He told the students, ‘Everybody in this room stands more of a chance of making a great new film than I do.’ Simply because they had never done anything before. They were fresh.”

During the KEXP soundcheck, Murdoch lits up the engineer with a seemingly incongruous request: “More laptop, please.” It’s hardly shocking that by now, amidst the cellos, violins and pianos, Belle & Sebastian would include some sound effects and loops on—say—computers, but the issue still came up on the band’s website (www.belleandsebastian.com). “What is the laptop used for that was sitting by the keyboards?” a fan wondered in the Q&A section, after catching the band live. “Checking e-mails and buying records from related websites,” Coburn wisecracked back.

But the smart remark of the day belongs to Jackson, after KEXP host Quilty 3000 asks where The Life Pursuit’s noticeable soul and R&B influences come from. “Where’d it come from?” he says. “Black America, probably.” If Jackson is impatient with the topic, one can hardly blame him: the band’s six-year-old EP, Loyal Man, was unabashedly Phil Spector-esque, and British pop bands dipping into Stax and Motown isn’t exactly new.

“Soul and R&B records generally seem to be the best-sounding pop records ever made, so why not?” says Murdoch. “We’ve kind of been heading in that direction since day one, really. It’s just taken us a while.”

No doubt—when Belle & Sebastian used to cover “Everyday People” live a few years back it was... well, to be politically incorrect about it, pretty darn white. Whereas on The Life Pursuit, songs such as “Suki” and “The Blues Are Making Hits on the Engineer” with actual groove and bottom. Belle & Sebastian’s influences have never been predictable; while the rest of the band once jokingly referred to Murdoch as “Donovan Lovedrae” because it seemed that every story written about the band early on compared him to Donovan, Arthur Lee, and Nick Drake, as a group they’re into everything from hip-hop to bossa nova to Steely Dan. And when Stuart reaches for his favorite Joni Mitchell record, it isn’t Blue or Court and Spark but The Hissing of Summer Lawns, which he puts on every time the band finishes a record. “It’s like changing out of some old smelly clothes and into fine new clothes,” he says. “I’m so relieved to hear something that isn’t us.”

In the hallway outside the KEXP performance studio, the bandmembers pose for a few Polaroids and cheerfully sign autographs. “Any requests?” Murdoch asks of one of the young ladies. “String Bean Jean?” she ventures, opting for an early B-side.

“Did we play that last night?” Murdoch asks one of the other bandmembers, who answers no. He nods. This moment tells you two things, both of them remarkable: Stuart Murdoch really does take requests, and, like the Grateful Dead, Belle & Sebastian play a different set every night.

Ontage at the paramount theater hours later, “String Bean Jean” is the 14th song in the set, and Murdoch even announces that it’s been requested by a local fan. Before that, at the beginning of the show, he tells the sold-out crowd, “we’ll try to play some sexy numbers”—a self-effacing but by no means ironic statement given the way the band sounds these days. He also frets that he forgot to moisturize before the show. “Does anyone have any moisturizer?” More self-deprecation, but that’s not to say he couldn’t really use a little Kiehl’s. Or that every person in the room might not have some.

But in truth, Belle & Sebastian’s fan base is no longer exclusively comprised of skinny, effete, indie-rock boys and winsome, barrette-wearing girls. Or at least, said fans are no longer quite so skinny or winsome. The Paramount is obviously full of people who purchased The Queen Is Dead and Murmur when those records first came out on vinyl. Some of them have probably been listening to BKS the past eight years, but just as many, if not more, have caught on only recently—since Catastrophe, the band has become a mainstay in the world of NPR and Starbucks. At one point, Murdoch asks everyone who’s seen the band before to raise their hands, followed by everyone who hasn’t. The first-timer contingent is the clear majority. “Shit, we’d better change the set!” he cries.

They then proceed to—you’re saving it again—fucking rock. The first thing you notice is their versatility: Just when you think you’ve figured out that the bass player also plays guitar, no big deal, he’s on the bongos; and the trumpet player is playing bass and the guitar player is playing one of three keyboard setups and the violin player is on a Holmer Melodica. The dynamic range of their sound is as controlled and pristine as Wilco’s, as precise (though obviously not as improvised) as a good jam band. And visually, Belle & Sebastian suggest nothing so much as Bruce Springsteen and the E Street Band—a bit unwieldy and very much a gang, up there for a rolling good time with a big dollop of shtick. Stevie Jackson, whose rapport with Stuart is almost like that of the Smothers Brothers’, would be Little Steven, natch, while Sarah Martin takes the role of Clarence Clemons. On this night there’s even a “Dancing in the Dark” moment, but with a plot, as they bring up a woman from the audience to act out the love triangle described in the lyrics of “Jonathan David.” When Stuart spins her round she covers her mouth in wonder, just like KEXP’s Janice.

“Electronic Renaissance” shows how the band both has and hasn’t changed. The song’s original version, on Tigermilk, came off like an attempt at making synth pop for a goof, but at the same time, they actually were attempting to make synth pop. Eight years later it’s a completely convincing electropop masterpiece. And when the band launches into “I’m a Cuckoo,” the Catastrophe glam-rock song with both lyrical and musical references to Thin Lizzy, Murdoch is transformed into a jittery Britpop frontman—Cocker, Albarn, ICapranos—as he shimmies and dances and into fine new clothes,” he says. “I’m so relieved to hear something that isn’t us.”
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Focal
Electra 1007 Be

LOUDSPEAKER

ack at the end of September 2005, I dropped by Jonathan and
Kathleen Scull's Chelsea loft after work. I can't remember why; I
think I was returning some gear. But we had also just finished
shipping the 2006 Stereophile Buyer's Guide to the printer that
day, and it was possible that I needed some high-quality musical R'n'R.
Sitting in Jonathan's listening seat—the legendary "Ribbon Chair"—and
enjoying the sound of his system, I flashed on the days
when he worked for Stereophile full-time and I occasionally used to pop round to
his place, just two blocks away from what was then our office, on Manhattan's Fifth
Avenue. Whatever components Jonathan was writing about, a consistent factor in
the always superb sound of his system was the presence of the pair of JMlab Utopia
loudspeakers that he had reviewed in the April 1998 issue of Stereophile. The
Utopias delivered a seamless, full-range presentation that served Jonathan's eclectic
taste in music while also allowing him to easily hear the effects, good or bad, of the
various tweaks he was always trying.

The next JMlab speakers I heard were the pair of Nova Utopia Bes that Paul
Bolin reviewed in June 2004. I had flown out to Minnesota in March of that year to
measure the speakers in Paul's listening room, and had spent a very pleasant evening
going through his enormous music collection, including some Fairport Convention
LPs I had not heard in 30 years. The Nova Utopias, which feature the company's
new beryllium-diaphragm tweeter, had served the music well that chilly evening.

Perhaps it was because I could always hear the JMlab speakers at Jonathan's, but,
since penning a short report on the Micron Carat in June 1996, I had never got off
my backside to write about a pair of speakers from the French company myself.

So, when we published an enthusiastic Sam Tellig review of the floorstanding
Electra 1027 Be last November, in which the beryllium-tweeter technology was
being trickled down to more affordable designs, I decided it was high time I
reviewed a model from Focal. (The company is in the midst of changing its brand
name from JMlab to Focal, the name of the parent organization.) I asked Audio
Plus Services, Focal's North American distributor, to send me a pair of Electra
1007 Be for review.

The Electra 1007 Be...

... is a stand-mounted, reflex-loaded two-way costing $3995/pair without stands.
Within its elegant package is packed a wealth of high speaker technology, the heart
of which is that rather special tweeter. Mounted in the center of a wide, curved,
aluminum front plate, the rear of which provides the necessary acoustic loading, the
tweeter uses an inverted dome pressed from pure beryllium foil. Beryllium is the
fourth element in the periodic table—only hydrogen, helium, and lithium have
lower atomic weights. But as well as being very light—its density is 1.5 times lower
than aluminum's—beryllium is also very stiff: five times more rigid than aluminum.
The speed of sound through beryllium is correspondingly 2.5 times faster than
through aluminum. The combination of these properties makes it ideal for use as a
tweeter diaphragm; its intrinsic vibrational modes are pushed up in frequency, well
above the audioband, which allows it to act as a pure piston up to a specified 40kHz.

The downside is that beryllium in dust form is poisonous. There is no danger to
the speaker's owner with the beryllium used as a complete, unbroken diaphragm,
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but the Electra 1007 Be's manual does include a section on how to seal and return the speaker if the tweeter is damaged in any way. The speaker is shipped with a cover over the tweeter; a magnetically attached grille protects it in use once the shipping cover has been removed.

Mounted below the tweeter on the curved front baffle and inset a little is a 6.5" Focal woofer with a gray cone made of what Focal calls "W" material, a sandwich comprising tissues of woven glass fibers each side of a core of structural foam. The benefit is a low-mass cone material that is stiff and has high internal damping—normally mutually exclusive properties—which makes it ideal for use in a woofer. The woofer is reflex-loaded; the rectangular port at the base of the cabinet rear has radiused lips to minimize wind noise.

The cabinet construction is complex, the wooden side panels double-radiused to give a profile that tapers toward the rear. This and an internal filling of fiber reduce the effects of internal standing waves. The 1"-thick front baffle also has a curved profile, matching that of the tweeter's front plate, to optimize diffraction. There are no sharp edges at all in the vicinity of the tweeter other than the cabinet top, and even that is chamfered. The plastic space-frame woofer grille mounts flush with the front baffle via an ingenious arrangement in which plastic sleeves are pushed over the woofer mounting bolts. The vestigial tweeter grille is held in place magnetically.

The crossover is mounted on the inside of the rear panel and is high-order, to give acoustic rolloffs of 36dB/octave, according to Focal's white paper on the Electra 1007 Be. Electrical connection is via a single pair of high-quality binding posts mounted on an aluminum panel above the port on the rear of the cabinet. Although the posts can be tightened only with the fingers, the wide spacing and ergonomic profiling of their heads initially placed a little further away from the sidewalls than the Snell LCR7 XLs (also reviewed this month), but ended up in pretty much the same places.

"BRILLIANT!" WAS THE WORD THAT LEAPT TO MY LIPS WHEN I PLAYED MY FIRST CD THROUGH THE ELECTRA 1007s.

MEASUREMENTS

The Electra 1007 Be was of average voltage sensitivity, at an estimated 88dB(B)/2.83V/m. Its impedance (fig.1) covered a wide range, with a minimum value of 4.3 ohms at 200Hz and a maximum value in the low treble of 21.5 ohms at 3kHz. With amplifiers having a high source impedance, such as typical tubed designs, this will tend to tilt up the speaker's response at high frequencies. The saddle in the impedance-magnitude trace at 52Hz indicates the tuning frequency of the rectangular, rear-facing port. The impedance traces are free from the small wrinkles that would point to the existence of enclosure resonances. Nevertheless, an investigation with a simple plastic-tape accelerometer uncovered a reasonably strong vibrational mode at 350Hz on all surfaces. Fig.2, for example, is a cumulative spectral-decay plot calculated from the accelerometer's output when it was fastened to the center of a side panel. The mode is clearly visible, as is one at 600Hz. These were audible with a stethoscope pressed against the cabinet, but not at the listening position.

As expected from the impedance graph, the woofer's minimum-motion point—where its cone is held stationary by the back pressure of the port resonance—
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Michael Fremer, Stereophile, August, 2005

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Michael Fremer, Stereophile, August, 2005

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two octaves blended into the whole. The Focal's treble sounded extended, clean, and grain-free—the tweeter's beryllium diaphragm obviously contributes significantly to a superbly performing transducer—but I suspected that the tweeter was balanced slightly on the "hot" side of neutrality. Reticent this speaker was not. Not that it always called attention to itself—nothing so overt. String sound on an SACD of works by Ralph Vaughan Williams with James Judd conducting the New Zealand Symphony Orchestra (Naxos 6.110053), for example, while vibrant, never sounded steely, bright, or fatiguing—quite the opposite, in fact. I felt I could listen for hours, and often did so. Even Eric Clapton's rather aggressively miked vocals on Me and Mr. Johnson (CD, Reprise 48423-2) could be played back at high levels without strain.

At the other end of the frequency spectrum, the Electra's upper bass was rather ripe in absolute terms. The bass guitar and kick drum on Me and Mr. Johnson lacked some edge to their sounds, and my Fender bass on the channel-identification tracks of Editor's Choice (CD, Stereophile STPH016-2) was a little plummy. Listening to the one-third-octave warble tones on Editor's Choice revealed that the Focals were still putting out useful bass down to the 40Hz band, with audible output in the 32Hz band (helped by the room), though the 25Hz and 20Hz tones were inaudible. Even at high sound-pressure levels, no wind noise emanated from the port.

Pink noise sounded smooth, with a seamless integration of woofer and tweeter, as long as I was sitting on or just below the tweeter axis: 37° from the floor on the 24" stands. Above the tweeter axis, the pink noise took on a bit of a hollow coloration. When I listened to the cabinet walls through a stethoscope while playing the stepped toneburst track from Editor's Choice, all the surfaces were a bit lively between 256Hz and 400Hz, though I couldn't ascribe any audible coloration to this behavior with music.

It's music that matters, of course, and good grief, how this speaker loved piano music. I slid Emanuel Ax playing Brahms' Handel Variations and the two Op.79 Rhapsodies (CD, Sony Classical SK 40486) into the Ayre C5-xe unit.

Some of the upper-bass boost evident is the result of the nearfield measurement technique, but the speaker overall does have a rich balance. Higher in frequency in fig.3, the Electra 1007 Be is impressively flat throughout the midrange and low treble, but the middle of the treble region is raised by 3-4dB compared with the level at lower frequencies. The beryllium-dome tweeter has an impressively wide bandwidth: it is still giving out energy at the 30kHz upper boundary of this graph.

The Focal speaker's dispersion in the vertical plane is shown in fig.4. A strong suckout develops in the crossover region immediately above the tweeter axis and below the woofer axis. The speaker needs to be placed on high stands, such as Focal's own models, to produce a neutral perceived balance. In the lateral plane (fig.5), the Electra's dispersion is wide and even, even above 10kHz. However, there is a significant off-axis flare at the base of the tweeter's passband in the same region where the on-axis response has an excess of energy.

The result of this behavior, as can be seen in the plot of the speaker pair's spatially averaged response in my
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FOCAL ELECTRA 1007 BE

versal player. The freedom to the sound of the piano on this recording was reproduced pretty much in full measure by the Electra. The highs sounded airy, the midrange clean and uncolored, and the lows relatively weighty for a small speaker. I worked on the master of Robert Silverman's new recording of Beethoven's Diabelli Variations (Stereophile STPH017-2) while preparing this review: not only did the Focals allow me to hear deep into the recorded acoustic—in the transition between Variations 24 and 25 I heard a faint shout outside the concert hall of which I had been previously unaware—but the sound of Bob's Steinway reproduced with a vivid, almost full-range character that was addictive. While this speaker is relatively small, what it had in the way of low frequencies was generously balanced, in turn balanced by the combination of smoothness and airiness in the highs.

At Home Entertainment 2005, Robert Silverman had performed Debussy's *La Cathédrale engloutie*, from the composer's first set of *Préludes*, which I had recorded using a pair of DPA cardioid mikes. The deep tolling in the piano's left-hand register, which represents the ringing of the cathedral's bells far beneath the waves, was reproduced in almost full measure via the Focals—although the speaker also let me clearly hear the low-frequency breakthrough from the XM Radio room next door!

I reached for a CD I hadn't played in 10 years: Jacques Rouvier's performance of these same *Préludes* (Denon 38C37-7121), which had been a favorite of mine in the late 1980s. This is one of the few CDs in my collection mastered with pre-emphasis; the Focals allowed me to appreciate not only the generous sweep of Rouvier's playing in *The Drowned Cathedral*, but also how dry and anonymous the surrounding acoustic was—or how poorly the early digital technology (it was recorded in 1984) had preserved that acoustic.

This triggered another search in the recesses of my CD storage, this time to find *Water Music* of the Impressionists, a 1979 collection of piano works performed by Carol Rosenberger and recorded by Stan Ricker using a pair of B&K measurement mikes (Delos D/CD 3006). Released in 1983, this was one of the very first CDs I bought: while its sleeve proclaims it to have been recorded with the late Tom

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**Measurements, continued**

listening room (fig.6), is an excess of energy between 3kHz and 10kHz. This is why the speaker tends to sound brilliant (good) under the right circumstances, and bright (bad) in suboptimal conditions. But note the generally flat midrange and the extended, if shelved-down, low frequencies.

In the time domain, the 1007 Be's step response on the tweeter axis (fig.7) indicates that the tweeter is connected in inverted acoustic polarity, the woofer in positive polarity. However, the step of the former smoothly hands over to the step of the latter, correlating with the good frequency-domain integration of the two units' outputs. The farfield cumulative spectral-decay plot (fig.8) is superbly clean, with virtually no trace of resonant decay evident, correlating with the speaker's grain-free presentation.

The Focal Electra 1007 Be's measured performance is generally superb. However, that elevated mid-treble will make the speaker intolerant of inadequate electronics and over-reverberant rooms alike. Large, acoustically well-damped rooms will be more to this speaker's liking than small, lively rooms. —John Atkinson

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**Fig.6** Focal Electra 1007 Be, spatially averaged, -octave response in JA's listening room.

**Fig.7** Focal Electra 1007 Be, step response on tweeter axis at 50° (5ms time window, 30kHz bandwidth).

**Fig.8** Focal Electra 1007 Be, cumulative spectral-decay plot at 50° (0.15ms risetime).
Stockholm's SoundStream system, I am left wondering how it was transferred to CD, as the SoundStream recorder ran at 50kHz rather than CD's 44.1khz. However it was done, it still sounds superb, and particularly so through the Focals (though with a little more bass than I remembered). *La Cathédrale engloutie* sounded significantly richer than in the other recordings. Some of this was due to Carol Rosenberger doubling the lowest "tolling bell" notes with a 16Hz C made possible by her Bösendorfer's extended keyboard (97 notes vs a standard concert grand's 88), but it was also due to the Electra's rather rich upper bass.

You get the idea: the Focal Electra 1007 Be and piano recordings are a match made in heaven—or France, at least. But enough Debussy—what about more universal types of music? The orchestral strings on the Naxos Vaughan Williams SACD were presented with all the fragile tan-

**Comparisons**

Compared with the Snell LCR7 XL, which I originally thought was the same price as the Electra 1007 Be (the Snell is actually 50% more expensive), the Focal speaker sounded significantly richer, deeper, more brilliant, more airy, and more expansive. It didn't have quite the same holographic imaging as the American speaker, nor was it quite so transparent in the midrange, but it could play louder without strain.

Which did I prefer? The Snell is more of a monitor, the Focal more of a music-lover's speaker, though I admit that this is rather a false distinction. Both speakers can do both tasks with much the same kind of music. During the preparation of this issue, I preferred whichever speaker I was listening to at the time. But the Focal will probably be of more universal appeal, given its more extended low frequencies and slightly wider capability of dynamic range.

**Conclusion**

With its black-and-aluminum front baffle, gloss-black top, and polished wooden side cheeks, the Focal Electra 1007 Be is a fine piece of furniture, and its appearance is matched by a grain-free, transparently balanced sound that allows the music to communicate very effectively. Its rich, brilliant character works optimally with naturally balanced recordings, and source components and amplification that are not themselves bright or tipped-up in the highs.

The Focal's upper bass is a bit exaggerated in absolute terms—whether this will be an issue or not will depend on the owner's room and taste in sound. Focal does supply foam plugs to turn the Electra into a sealed-box design if it is to be used close to the wall behind it or if the upper bass is found excessive in a particular room. I felt the plugs made the treble sound a bit excessive, however, by damping the bass. Even with its ports unblocked, the 1007 Be can occasionally be a bit relentless with overcooked recordings, especially before the speaker is broken in. But fed high-quality program and driven by a muscle amp, the Electra 1007 Be will convey the musical message in a most satisfying manner. Highly recommended.

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**FOCAL ELECTRA 1007 BE**

The **FOCAL ELECTRA 1007 BE**

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**THE FOCAL ELECTRA 1007 BE’S APPEARANCE IS MATCHED BY A GRAIN-FREE TRANSPARENTLY BALANCED SOUND THAT ALLOWS THE MUSIC TO COMMUNICATE VERY EFFECTIVELY.**

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**ASSOCIATED EQUIPMENT**

**DIGITAL SOURCES**

- Ayre C5-xe universal player;
- Olive Symphony, Slim Devices Squeezebox media servers;
- Mark Levinson No.30.6, Benchmark DAC 1, Grace m902 D/A processors.

**PRE-AMPLIFIERS**

- Mark Levinson No.326S, No.32 Reference.

**POWER AMPLIFIERS**

- Mark Levinson No.33H monoblocks.

**LOUD-SPEAKERS**

- Snell LCR7 XL.

**CABLES**

- Digital: Kimber Illuminations Orchid AES/EBU, AudioQuest SVD-4 S/PDIF & OptiLink 5 TosLink.
- Interconnect: AudioQuest Cheetah, Madrigal CZ Gel-1, Ayre Signature Series, Crystalconnect (balanced); DiMarzio (unbalanced).
- Speaker: AudioQuest Kilimanjaro. AC: PS Audio Lab, Shunyata Anaconda Helix Alpha, manufacturers' own.

**ACCESSORIES**

- Celestion 24" Si stands, Target TT-5 equipment racks, Ayre Myrtle Wood Blocks; ASC Tube Traps, RPG Abbfusor panels; PS Audio Power Plant 300 at 90Hz (preamps, disc players only), Audio Power Industries 116 Mk.II and PE-1 AC line conditioners (not power amps); AC power comes from two dedicated 20A circuits, each just 6' from the breaker box, a Mark Levinson No.33H plugged into each.

—John Atkinson
Once you've got used to it in the system, taking it out means no music - it's as simple as that"
Roy Gregory
Hi Fi+ Issue 35

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EQUIPMENT REPORT

Snell Acoustics
LCR7 XL

LOUDSPEAKER

When someone is described as having “written the book” on a subject, it is generally taken as a figure of speech. But veteran speaker designer Joseph D’Appolito, PhD, quite literally “wrote the book.” His Testing Loudspeakers (Audio Amateur Press, 1998) is an invaluable resource for those of us who, lacking any talent for designing speakers ourselves, nevertheless find the subject of speaker performance endlessly fascinating. So when Snell’s PR consultant, Bryan Stanton, contacted me a while back about reviewing the LCR7, the first design D’Appolito had seen through from start to finish for the Massachusetts-based company since he had replaced David Smith as Snell’s chief engineer, I suffered from more than a little anxiety.

I took delivery of a pair of LCR7s, a fairly small two-way, sealed-box design that sells for $2000/pair (see sidebar, “The Standard LCR7”). This elegant speaker features two woofers and a tweeter closely spaced in a D’Appolito array—yes, the same “D’Appolito”—with the woofers top and bottom of a centrally placed tweeter (or to either side of it when the speaker is used for the center channel in a home theater system). But soon after I started my auditioning, Bryan informed me that, to celebrate the 30th anniversary of Snell Acoustics, Joe had designed a no-holds-barred version of the LCR7, the more expensive LCR7 XL. That, I decided, would be the speaker I would hang my Snell reviewing hat on.

Anniversary...

I well remember the first time I met Snell Acoustics founder Peter Snell. He was demonstrating his classic Type A loudspeaker at the 1979 Summer Consumer Electronics Show, in Chicago. “This’ll clear the room,” he winked at me, as he put on the Philips LP of Puccini’s Tosca (6700 108), conducted by Sir Colin Davis and featuring Monserratt Caballé in the title role—unbeknownst to him, my favorite performance at that time. I listened all through the second half of Act I, which ends with police chief Scarpia (Ingvar Wixell) sending his thugs out to follow Tosca to find the escaped terrorist Cavaradossi (José Carreras) while the good citizens of Rome (the Covent Garden chorus) celebrate mass. Far from clearing the room, it was a seminal experience for quite a number of CESgoers!

The Type A was one of the best speakers of its era—full-range, low-coloration, and intended to be used adjacent to the wall behind it— and Peter Snell went on to design an entire range of loudspeakers before tragically dying of a heart attack in September 1984: Kevin Voecks was the company’s chief engineer through the rest of the 1980s and the first half of the 1990s, and designed some excellent speakers, including my favorite, the Type E, before he left to cofound Revel. David Smith, ex-JBL, KEF, and McIntosh, replaced Kevin, and was responsible for the high-performance XA series before he moved to PSB in 2003.

...XL Edition

The LCR7 XL is the flagship of Joe D’Appolito’s Series 7 speakers. Its twin 5.25” magnesium-cone woofers, with their copper-finished, stationary “phase plug” mounted on the end of the pole-piece and a low-profile cast basket, are sourced from Norwegian company SEAS, as is the Sonotex-dome tweeter. The Millennium-series tweeter has a neodymium magnet, a sealed back chamber, and more unusually, a silver-wire...
For more information on the EPX (pictured above) or any of our other Montana Loudspeakers, please visit our website at www.pbnaudio.com
voice-coil. The short flare around the tweeter’s dome is also finished in copper, and its faceplate is cut away to allow close mounting to the woofers. All three of the expensive SEAS “Excel” drive-units are magnetically shielded, and the response of each sample of the LCR7 is guaranteed to be within ±0.5dB of the target. The crossover is complex, with high-order slopes, and is mounted on the internal face of the terminal panel. Internal wiring is fairly small gauge, and pressure connectors are used to hook up the drive-units rather than solder joints. Electrical connection is via twin pairs of five-way binding posts on an inset panel on the speaker’s rear.

The only practical quibble I had with the Snells was these binding posts. They’re spaced for double banana plugs, which in itself is not a problem, but the fact that they have knurled rather than hexagonal knobs is. A nut driver can’t be used, but the close spacing makes it difficult for someone with stubby fingers like mine to fully tighten the connection.

Snell’s Series 7 industrial design was done by Gerd Schmieta. The XL’s elegant enclosure, made at Snell’s cabinet shop in Haverhill, Massachusetts, is identical to that of the standard LCR7. Its vertical edges are rounded, the front baffle is painted black, and the sides and back are veneered. The cabinet is stiffened with aluminum top and bottom caps as well as a horizontal H-brace behind the tweeter, and is filled with acrylic foam. A metal-mesh wraparound grille runs the full height of the baffle and fits into slots between the profiled edges of the baffle and the end plates. The LCR7 XL’s overall fit and finish are superb.

**Sound**

I set the XLs up on 24”-high, single-pillar Celestion stands damped and mass-loaded with sand and bird shot. The speakers were arranged with their drive-units vertically in-line; small pads of Blu-Tack provided resistive coupling to each stand’s top plate. After the usual experimentation, I ended up with the speakers well away from the wall behind them, their rear-panel switches in the upward, Normal position.

My first impressions were very favorable, especially after my experience with the standard LCR7s (see sidebar, “The Standard LCR7”). The tonal balance didn’t seem quite as lightweight as with the less-expensive speaker. Playing the ¼-octave warble tones on Editor’s Choice (CD, Stereophile STPH016-2), the speaker was still putting out useful signal in the 50Hz band. Though the 40Hz, 25Hz, and 20Hz bands were inaudible, the lowest mode in my room did boost the left speaker’s reproduction of the 32Hz band sufficiently to be just audible. As I’ve mentioned before in these pages, the advantage an optimal sealed-box woofer alignment offers over the almost ubiquitous reflex or ported woofer response of each. Overall, the two speakers are very similar, taking into account the fact that the presence of the grille on the XL gives rise to a small top-octave peak. However, the standard version both has a little more mid-treble energy apparent on-axis and has less bass extension. Comparing the impedance plots (not shown), the LCR7’s woofers are tuned to 87Hz compared with the XLs 70Hz. Its extra low-frequency extension pushes the XL’s balance across the line that separates minimonitors that can be used alone from those that need a subwoofer to be musically satisfying. The standard LCR7 fails to cross that line, I feel.

The Snell LCR7 is still an excellent-sounding, well-engineered loudspeaker, but can really be recommended for use only with a subwoofer, unless you have a small room.

*—John Atkinson*
What does *ne plus ultra* mean?

*n ne plus ultra* \nay-plus-UL-truh; noun:
1. The highest point, as of excellence or achievement; the acme; the pinnacle; the ultimate.
2. The most profound degree of a quality or condition.

As more and more audio retailers around the country embrace convenience, control, and gadgetry over audio and video performance, they effectively abandon the music and film lovers who desire a real experience from their systems at home.

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design is that the ultimate rate of rolloff is only 12dB/octave—gentler than the 24dB/octave that results from the woofer and port outputs being in antiphase below the port resonance. So while a sealed-box design will have a higher nominal ~3dB frequency than a comparable ported design, in all but large rooms it may well have more mid- and low bass, due to the usual “room gain” at low frequencies.

The LCR7 XL takes full benefit of this phenomenon. While its low frequencies were restricted in absolute terms—this Snell will never satisfy fans of classical pipe-organ recordings or devotees of...
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bass-synth-heavy techno—it offered
enough midbass in-room to provide
musical satisfaction with many recordings.

And the quality of the Snell's bass was
simply superb: tight, controlled, and
free from the boomy upper-bass over-
hang that naïve listeners often mistake
for "good bass." Other than lacking a bit
of fundamental weight, my Fender-bass
channel-check tracks on Editor's Choice
had an excellent balance between the
leading edges of the notes and the body
of the tone. There was enough upper-
bass energy present to allow Jerome
Harris's rather reticently mixed Taylor
acoustic bass guitar on his Rendezvous
(CD, Stereophile STPH013-2) to fully
support the higher-frequency instru-
ments. And on Eric Clapton's Me and
Mr. Johnson (CD, Reprise 48423-2), the
Snell's lean midbass compensated for
the overcooked EQ the engineers had
applied to Nathan East's tasty bass playing
and Steve Gadd's kick drum.

Pink noise sounded smooth on the
Snells, with no undue emphasis at any
frequency. Equally as important, the
speaker's perceived balance on pink noise
didn't change appreciably over quite a
wide vertical listening window. The verti-
cally symmetric drive-unit array that
bears Joe D'Appolito's name works as ad-
vertised in widening the listening window.

**measurements, continued**

In the time domain, the LCR7's farfield step response on the tweeter axis (fig.7) indicates that all three drive-
units are connected with positive acoustic polarity, with
the tweeter's output slightly leading that of the woofers.
The smooth handover from the tweeter step to that of
the woofers is broken by a small spike, presumably due
to the reflection of the tweeter's output from the grille
and associated with the small peak at 15kHz in the fre-
quency response. Some small ripples can be seen in
the delay of the woofers' step; the Snell's cumulative
spectral-decay plot (fig.8) indicates the presence of a
small amount of delayed energy in the presence region,
but the graph is otherwise very clean.

As might be expected from a Joe D'Appolito design,
the Snell LCR7 XL offers superb measured perfor-
mance.

—John Atkinson
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I did almost all my auditioning with the LCR7s' metal-mesh grilles in place. Perhaps, just perhaps, there was a bit more top-octave air with the grilles, but I may have been imagining it, considering that the difficulty of removing and replacing the grilles made immediate A/B comparisons impossible. But grilled or raw, the quality of the LCR7 XL's high frequencies was superbly free from grain or hardness. There was no tendency for recorded cymbals to degenerate into white noise. Instead, different cymbals sounded maximally different from one another, always a good sign of tweeter quality.

My current reference for recorded strings is an SACD of James Judd conducting the New Zealand Symphony Orchestra in works by Ralph Vaughan Williams (Naxos 6.110053). Played back on the Snells, the Fantasia on a Theme of Thomas Tallis was everything I could want from a classical orchestral recording, with the contrast between the main string orchestra and the solo quartet as clear yet as unforced as when I last heard the work live, with the Boston Symphony at Tanglewood in summer 2004.

There was an impressive transparency to recorded information throughout the midrange and treble. This spring I have been editing and mixing my next project for Minnesotan male-voice choir Canus: There Lies the Home, a collection of songs about the sea scheduled for CD release this summer. Some spills that worked fine on headphones were revealed by the Snells as needing more balance, but at $6000/pair, whether or not this limited low-frequency extension and ultimately limited maximum loudness, this speaker is almost without flaw. Its balance is impressively neutral, its sound suffers from neither grain nor harshness nor coloration, what bass it does have is clean and well-defined, and its imaging and soundstaging rank among the best I have heard at any price. This is a true monitor, without any of the sense of "tenuously revealing" connoted by that word.

However, for almost the entire period I spent with this speaker, I was under the mistaken impression that the XL was twice as expensive as the standard LCR7, not three times the price, as it actually is. At $4000/pair, this speaker would get an unreserved recommendation from me. But at $6000/pair, its superficial perceived value drops precipitously in comparison with similar-priced floorstanding designs. Yes, the LCR7 XL still sounds just as superb, but at $6000/pair, whether or not what it does so well outweighs its lack of low bass becomes much more of a critical question, and one whose answer will vary enormously from audiophile to audiophile. And its limited availability might mean that it will not always be possible to find a Snell dealer with a pair for audition.

But I loved the Snell LCR7 XL—it did enough of what I deem important to justify its presence in my room. Would I buy it? Ask me a couple of months after the review pair has been returned to the manufacturer.  

ASSOCIATED EQUIPMENT

SNELL ACOUSTICS LCR7 XL

DIGITAL SOURCES: Ayre C5xe universal player; dCS P9i; SADCo player; Mark Levinson No.31.5 CD transport; Olive Symphony; Slim Devices Squeezebox 3 media servers; Mark Levinson No.30.6, Benchmark DAC 1, Grace m902 D/A processors; Alex's MasterLink hard-drive recorder.

POWER AMPLIFIERS: Mark Levinson No.3805, No.326S, No.32 Reference; NHT Passive Volume Control.

CABLES: Digital: Kimber Illuminations Orchid AES/EBU, AudioQuest SVD-4 S/PDIF, OptiLink 5 TosLink. Interconnect: AudioQuest Cheetah, Madrigal C2 Gel-1, Ayre Signature Series, Crystalconnect, Canare (balanced); DiMarzio, Canare (unbalanced).

Speaker: AudioQuest Kilimanjaro. AC: PS Audio Lab, Shunyata Anaconda Helix Alpha, manufacturers' own.

ACCESSORIES: Celestion Si speaker stands, Target TT-5 equipment racks, Ayre Myrtle Wood Blocks; ASC Tube Traps, RPG Affusor panels; PS Audio Power Plant 300 at 90Hz (preamps, disc players only), Audio Power Industries 116 Mk.II & PE-1 AC line conditioners (not power amps); AC power comes from two dedicated 20A circuits, each just 6' from the breaker box, a Mark Levinson No.33H plugged into each. —John Atkinson

1 Out of interest, I checked the prices of the SEAS drive-units used in the LCR7 XL. The six units would set back the DiYer no less than $950, which makes the $6000/pair price of the complete Snell speaker system look not unreasonable.
here is a sweet spot in any manufacturer's lineup where minimum price and maximum performance meet. More expensive products in the line may offer higher fidelity, but the cost may not be commensurate with the improvement. For instance, VPI's HRX and Super Scoutmaster turntables cost more than their standard Scoutmaster model, and they perform better—but for my money, the sweet spot of VPI's line is the standard Scoutmaster, with or without such options as the outer clamp and Signature tonearm.

Back in the 1990s, the sweet spot of Audio Physic's line of loudspeakers was the Virgo II ($4995/pair at that time). Some thought the tiny Step filled that niche, but for me, the Virgo II was magical. I preferred it to an AP speaker that, at the time, cost $10,000/pair and whose name I can't even remember, which should tell you something.

I've been waiting for the Virgo II's replacement ever since. The Avanti III, which I reviewed in the August 2001 issue (Vol.24 No.8), was far more capable in every way than the Virgo II, it was my reference for a few years, and it's still a great speaker—but to my ears, the Virgo II's magical balance of strengths eluded it. Same with the Virgo III that Brian Damkroger reviewed in September 2003 (Vol.26 No.9): more capable in every way than the II and, at $7495/pair, more
expensive than the Scorpio, but lacking the II's mojo.

After my less-than-enthusiastic review of Audio Physic's Caldera ($30,000/pair) in November 2005, credit AP and their importer, Gabby Anram of Soundquest LLC, for giving me the opportunity to review the Scorpio, which I requested after hearing a short demonstration at the Consumer Electronics Show in January. In fact, walking into AP's room at CES 2006 not long after that Caldera review had been published was, um, interesting. When I encountered Audio Physic's business manager, Dieter Kratochwil, and asked him how the show was going, he looked me straight in the eye and said, "Until just now? Fine!" I loved his honesty and had a good laugh (to myself). Had our roles been reversed, I'm sure I wouldn't have been thrilled to see him, either.

**Scorpio**

Audio Physic's Scorpio is a rear- and bottom-ported design that could be considered a smaller version of designer Manfred Diestertich's bottom-ported Avanti III ($12,495/pair) or a larger version of AP's Tempo ($3995/pair). Either view would probably suit Audio Physic, who intend the Scorpio to bridge the gap between those two models. The Scorpio costs $6495/pair—$6995/pair, depending on finish.

It's also handsome. The complex, well-braced cabinet, manufactured by Hornset in Denmark using that company's patented Hornflex technology, features a narrow front baffle tilted back 7°, and nonparallel side panels that curve toward the rear. Unlike the curvaceous Avanti III, though, the Scorpio's rear surface is flat. The

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**Measurements**

The Audio Physic Scorpio has a high specified sensitivity of 91 dB/W/m. However, measured on its tweeter axis without the grille, the speaker appeared to have above average voltage sensitivity, at an estimated 88.5dB(8)/2.83V/m. Its impedance (fig.1) stays between 4 and 6 ohms over most of the audioband, with a minimum value of 3.6 ohms at 93.5Hz. There is also a combination of 5.2 ohms and a −41° electrical phase angle at 78Hz, which might be taxing for optimistically specified power amplifiers, given that many kinds of music tend to have a lot of energy at this frequency.

A discontinuity is visible in the impedance traces at 125Hz, suggesting some kind of resonance. However, while a cumulative spectral-decay plot (calculated from the output of an accelerometer fastened to the front baffle and level with the center of the side-mounted woofers) revealed a major vibrational mode at 266Hz (fig.2), the other panels were relatively well-behaved and nothing was evident at 125Hz.

The saddle centered between 30Hz and 40Hz in the impedance-magnitude trace suggests that the rear- and bottom-facing ports are tuned to a low frequency. The green trace in fig.3 shows the summed acoustic output of the ports, measured in the nearfield and scaled in the proportion of the square root of the total radiating area compared with those of the woofers and the midrange units. A little down in level, it doesn't fully extend the Scorpio's low-frequency response, though this graph does not take into account the fact that the bottom port's output will be reinforced by the floor. The ports will also relieve the woofers of high midbass excursions. The trace also has some resonant peaks evident in the midrange, though these are well down in level, and there is a small peak present at 125Hz.
It's not a new format
It's a new dimension
veneer and overall fit'n'finish are exceptional. This graceful-looking, ideally proportioned speaker would be at home in the swankest living room—especially in the review pair's ebony finish.

The foundation of the Scorpio's sound is provided by four 7" paper-cone woofers: two on each side operating in push-pull configuration, which is said to cancel cabinet resonances. The lower of the two front-mounted 6" coated-paper-cone drivers operates as a midbass/lower-midrange driver from 150 to 500Hz, while the upper one operates between 150Hz and 2.8kHz, and hands the signal off to a 1" modified soft-dome tweeter.

Cold out of the box, THE SCORPIOS PRODUCED AN UNMISTAKABLY COHERENT PICTURE.

Like the Caldera and other recent AP speakers, the Scorpio has, on its rear panel, a massive, elastomer-suspended vibration-control plate of solid aluminum that contains the speaker terminals. Spiked metal cross-braces attached to its base support the cabinet.

The minimum-motion point of the woofers' summed outputs (fig.3, red trace) occurs at a fairly low 38Hz, with a response rise above that frequency peaking between 80Hz and 100Hz. Most of this peak will be due to the exaggerating effect of the nearfield measurement, which assumes a 2π (half-space) acoustic environment. Even so, the Scorpio's upper bass is a little rich in absolute terms, its mid-bass shelved-down. A suckout is evident at 300Hz in the woofers' response, with only a gentle rollout evident above that frequency.

The midrange units differ a little, in that the lower driver gently rolls off above 450Hz while the upper driver continues upward in frequency to cross over to the tweeter at a measured 2.4kHz. The sum of the nearfield midrange responses (fig.3, blue trace) crosses over to the woofers at 150Hz, with an approximate second-order rollout broken by a notch at 93Hz. Higher in frequency, the upper midrange is impressively flat on the tweeter axis, but with an alarming suckout in the presence region. This lack of energy—presumably due to destructive interference between the tweeter and midrange-unit outputs on this axis, which is 41" from the floor—would help explain why the Scorpio's measured sensitivity was lower than the specified figure.

The depth of this suckout was very critical regarding the measurement axis. Moving the microphone 1" higher reduced its depth. How the Scorpio's anechoic response changes in the vertical plane is shown in fig.4, with the...
produced an unmistakably coherent picture. The musical message solidified, leaving only faint traces of mechanical artifacts that might have been described as bass or treble. Like any other speaker, of course, the Scorpio had a sonic signature. What’s critical to a speaker’s success is making sure that signature cuts across all design parameters. For example, if you’re going to have soft and supple bass, you don’t want to couple that with aggressively fast transients and spotlit high frequencies.

One reason the Vienna Acoustics Beethoven Concert Grand struck me as a success (see my review in the May 2006 issue) was its consistency: delicate, smooth, silky trebles; warmish mids; and supple, textured bass. From top to bottom, the Beethoven was less about attacks and more about textures and harmonics, though it provided sufficient balance in every parameter. Out of the box, the Scorpios were more about air, attack, transient detail, and spatiality, but didn’t fail to provide the harmonic underpinnings, the supple textures, the required delicacy to sound both exciting and inviting.

Before break-in—or after I’d gotten used to its sound, which is how those who don’t believe in speaker break-in would characterize it—the Scorpio sounded somewhat tight on top and a bit brittle, mechanical, and stiff in the upper bass and lower mids. But after a week of heavy pounding, the speaker seemed to let go of its defensive posture and began delivering a purely musical picture.

But even in those first few encounters, the Scorpio did a very Virgo II-like thing: I’d be sitting in my listen-
"I don’t think there is a DAC as good anywhere near this price unless you have $30K!"

One of the letters we have received from enthusiastic Reimyo DAP-777 owners

I finally had time for some serious listening to the latest Reimyo DAP-777 DAC, and was completely floored by what I experienced. I use a McIntosh MCD751 dedicated CD transport to drive it, and have previously used a Wadia 15 decoding computer and most recently the excellent Chord DAC64.

The performance of the Reimyo DAC is completely unsurpassed relative to any digital playback that I have ever heard (it’s not even close!). It makes voices sound so natural by getting the body and harmonic decay so properly integrated, that by comparison it makes the Chord sound like the singers were singing into a megaphone! The instrumental timbre and acoustics of the actual recording venue are so realistically portrayed that it's eerie to hear. I’ve never heard such a natural, acoustic portrayal of music from CD. It’s a true revelation and a pleasure to listen to, with a totally effortless presentation that draws you into the musical performance. It makes you want to relisten to all your CDs since you're experiencing them as never before. I’m ecstatic about it’s sound, as it presents a musicality that I didn’t believe was even capable of being extracted from the redbook CD format. A truly revolutionary and amazing product that leaves me scratching my head as to how they’ve accomplished what so many have tried to for so long.

Thanks again and my best regards,

[Image of Reimyo DAP-777]

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DAP-777

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you can almost feel the walls closing in on the musicians. But when you do instance, though it's closely miked, corner. When you listen to Bill Evans', ppios' ability to transform my listening and a triangular stage wedged into one wide, deep stage of surprising height for a speaker only 3.6' tall, providing the "Where'd the speakers go?" trans- startle me, setting off a stand-and-fight rush of adrenaline.

Snap your fingers in front of your face while moving your hand from side to side and you have the Scorpio's message. It lays out the picture in authoritatively three-dimensional space on a wide, deep stage of surprising height for a speaker only 3.6' tall, providing the “Where'd the speakers go?” transparency I remember from my first encounter with the Virgo II.

I was moved early on to pull well-recorded live albums from the shelves. I was never disappointed by the Scorpios' ability to transform my listening space into the Village Vanguard, the Village Gate, Carnegie Hall, Town Hall, or any of the other New York City spaces in which those records were recorded, and in which I've often heard music live. The Vanguard is a cramped basement with a low ceiling and a triangular stage wedged into one corner. When you listen to Bill Evans’ Waltz for Debby (45rpm LPs, Riverside/Analogue Productions), for instance, though it's closely miked, you can almost feel the walls closing in on the musicians. But when you do

catch sonic glimpses of patrons sitting at the tables, you hear them well back in space—at least through speakers able to define the space. The Scorpios did that job about as well as any pair of speakers I've heard here, though of course they can't suggest the full volume of a truly large hall, such as Carnegie. For that you need a speaker capable of plumbing the depths, which the Scorpio does not. I'll take its tight, rhythmic delivery, minus the bottom octave or so, over speakers that go lower but lose control or sound bloated. Still, the Scorpio sounded good and reasonably smooth down to the mid-30Hz region.

After conquering space, the Scorpios put tightly drawn, optimally proportioned, three-dimensional images in that space. The illusion remained convincing even with the lights on, whether I was listening to a live or a studio recording. For me, great studio imaging is defined by my original mus- tum of a truly large hall, such as Carnegie. For that you need a speaker longtime Mitchell engineer Henry Lewy put behind Russ Kunkel's drums. This perennial favorite album just keeps sounding more magical and more real as my system improves. I once thought Mitchell's voice sounded some-what bright and antiseptic. It doesn't.

These are all small details of time and space that the Scorpios got so

crude with the negative-going overshoot of the midrange units, correlating with the good frequency-domain integra- tion of those units' outputs. The Audio Physic's waterfall plot on the tweeter axis (fig.10) is disturbed, of course, by the presence-region suckout, but is generally clean, though a low-level mode can be seen at 3.6kHz.

When I examine a loudspeaker like the Audio Physic Scorpio, I am compelled to wonder why the designer chose the specific drive- unit polarities that he did. Yes, the spatially averaged response in MF's room was superbly flat, but a conventional arrangement of drive- unit polarities would also have measured flat in-room, and would have made the speaker less fussy about setup and listening axis.

—John Atkinson
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right. What about the frequency balance? In this area, the first sample of Audio Physic's far more expensive Caldera sounded and measured surprisingly poorly, and the second sample did only somewhat better. Of course, I haven't seen John Atkinson's measurements of the Scorpio as I write this, but based on my weeks of concentrated listening, I'm sure the speaker's in-room response will be far more linear than the Caldera's. There was nothing mellow about the Scorpio's sound, but the Caldera's unremitting brightness was nowhere to be heard—unless I stood up and positioned my ears well above the tweeter, when it sounded noticeably bright. I'm sure JA's measurements will show that.

When I sat down again, the Scorpio produced a smooth balance of satisfyingly deep, well-articulated bass free of overshang and bloat, a pleasing transition to the midbass (where its performance was far superior to that of the noticeably warmish Virgo II), a slightly cool midrange with a subtle accent in the presence region, and an airy, extended, transparent response. High SPLs didn't compress the sound or change its basic tonal balance, yet it was also detailed, open, and transparent during low-level late-night listening sessions.

**Conclusion**

As loudspeaker prices rise, much of what you're paying for is bottom-end frequency extension and the ability to play loudly without strain. The Audio Physic Scorpio is a very capable $6500/pair design that goes reasonably low while being free of cabinet-induced colorations, and can play at high SPLs without compression or changing its winning personality.

If you're getting the idea that I really liked this speaker, you're correct. Before sitting down to write this review, I conducted a listening marathon on both vinyl and CD, playing every kind of music, from Mozart's The Magic Flute (LP, Deutsche Grammophon 2709 017), to an advance CD of Cassandra Wilson's new Thunderbird, produced by T Bone Burnett (Blue Note 50254), to Broken Social Scene's sometimes excruciatingly bright album You Forgot It in People (LP, Arts & Crafts A&C 001), and even James Blunt's Back to Bedlam (CD, Atlantic 83752-2), which I actually like—call me gay. While no speaker will satisfy everyone, the Scorpio is one that hits all the right visual and sonic marks.

The Scorpio is graceful looking, well proportioned, solidly built, and meticulously finished. And if you like "seeing" your music, this speaker will not disappoint. In fact, it may sometimes scare the crap out of you, presenting recorded events as if they're actually occurring in your room.

Though the Scorpios' overall presentation will not suit all tastes, their spatial presentation was voluminous and crystalline-transparent, the transient performance fast and tidy, and the overall tonal balance free from discontinuities. Some will find it a bit forward and perhaps aggressive, but others will, like me, appreciate its exciting, involving sound. Because the Scorpio is free of audible frequency lumps and bumps, whatever its mild colorations—and every speaker is colored in one way or another—they will soon dissolve, leaving only musical satisfaction.

During the months I had the Scorpios in my listening system, they did whatever I asked of them. Play loud and rock out? No problem. Put me in a familiar space? Sure thing. Show me a piano concerto and make it believable the same night I'd seen one live at Avery Fisher Hall? Piece of cake. Solo female singer? I believed. No loss of fine detail? None. Finally, a worthy replacement for the Virgo II? In my opinion, yes. The sweet spot of the Audio Physic line? Definitely.

---

**ASSOCIATED EQUIPMENT**

**ANALOG SOURCES**
- Continuum Audio Labs Caliburn turntable
- Graham Phantom, Continuum Cobra tonearms
- Lyra Titan (stereo & mono versions), Clearaudio Concerto cartridges

**DIGITAL SOURCES**
- Musical Fidelity kW SACD player, Alevis MasterLink BPT-modified hard-disk recorder

**PREAMPLIFICATION**
- Manley Steelhead, Einstein The Turntable's Choice phono preamplifiers; Musical Fidelity kW preamplifier

**POWER AMPLIFIERS**
- Musical Fidelity kW monoblocks, Music Reference RM-200

**LOUDSPEAKERS**
- Vienna Acoustics Beethoven Concert Grand, Wilson MAXX2

**CABLES**
- Phono: CrystalConnect Piccolo, Continuum Castellon magnetic isolation stand, Fine Line Element Pagode equipment stands; Audiodharma Cable Cooker; Shunyata Research Hydra 2, Hydra 8 power conditioners; Aclorlink isolation transformer; ASC Tube Traps, RPG BAD & Abbfusor panels, Hallograph Sound Field Optimizers; VPI HW-17F, LoriCraft PRC4 Deluxe record-cleaning machines

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e-TP609
Rega Apollo
CD PLAYER

You've heard it said that the early bird catches the worm, which is all well and good if you like worms. If you're more interested in music, you might want to follow the lead of Roy Gandy instead: He's the managing director of Rega Research, a 33½-year-old audio company that was the very last of its kind to enter the CD market. Rega's first CD player, the Planet of 1996, was a success in virtually every way.

The world has moved on since then, for better and for worse: better in the sense that digital sound has continued to improve, worse in the sense that the major corporations with the technology for making integrated digital control systems—the basic servo and data-control chipsets—have shifted their focus toward DVD and away from the humble music-only compact disc. That state of affairs has prompted Gandy and company to tap a different technology source, and to launch an entirely new player: the $995 Rega Apollo.

As Gandy puts it, "If we go back three years, that's when 'the big five' stopped supplying kit to specialist manufacturers. And all of them rely on chipsets or transports or whatever from Sony, Philips, and the rest. Around the same time, CD-player sales were decreasing. So Rega got together with two other specialist manufacturers in the UK, and we eventually found a company near Cambridge that had foreseen this hole..."
in the market, with all the Japanese companies pulling out. They predicted, correctly, that a number of people would continue to want to make boomboxes in China, so they developed their own chipsets, and not just the software.”

Gandy can’t name the UK company in question—his relationship with them involves a confidentiality agreement—but he says that both they and Rega stand to benefit. “We agreed to work with them at the debugging stage, to help work out various problems—which their Chinese clients are in less of a position to do—and in exchange Rega gets to buy chipsets in small quantities.”

Small in amount—but hardly small in power. Gandy says that the Apollo incorporates more than 20MB of memory, along with true 32-bit processing capabilities. That’s several times the power of early digital control systems, and Gandy suggests that this newer level of technology was needed all along to attain the performance goals set for “Red Book” digital playback in the first place. “This isn’t at all like working with the old CD chipsets,” he says. “For the first time, we’ve got a CD operating mechanism that is so good, all we’ve had to do is avoid messing it up. Now, for example, we can design a better power supply and it makes the player better instead of worse: We don’t have to worry that we’re taking out something that was masking a flaw.”

From puck to chuck

The Apollo is built into the same casework as the Rega Planet, with one key difference: The new player’s transport holds the disc with a three-point ball chuck instead of a magnetic puck. That means the motor has less mass to spin, so the disc can accelerate and decelerate with greater ease. It also means that Rega’s already elegant transport lid is now a single, undisturbed expanse of smoked Plexiglas—which looks very nice indeed.

The Apollo’s transport, manufactured by Sanyo, is compliantly suspended from the upper portion of Rega’s standard chassis of cast aluminum alloy. The D/A converter is Wolfson’s top-of-the-line WM8740, a dual-differential chip that operates in sigma-delta mode and supports word lengths of up to 24 bits. The output section, which is said to apply class-A sized data (fig.1, lower traces). Channel separation (not shown) was superb in the midband, with any crosstalk buried beneath the noise floor. However, the usual capacitive coupling degraded the separation to a still...
amplification to a digital source component in an entirely new way, is Rega's own design.

Apart from all that, the Apollo is a straightforward thing, with a front-mounted board for the logic bits and a single main circuit board for all the rest, fastened to the bottom of the chassis alongside the smallish toroidal mains transformer. RCA and optical digital output jacks are on the rear panel for those who wish to use an outboard DAC, as well as the usual pair of phono jacks for line-level analog output. In addition to the mains switch, the front panel has only the most basic start, stop, and track-advance buttons, while those and a full brace of other user controls appear on the nicely styled remote handset—including a button that can be used to kill the display lights. To jump ahead just a bit: As with the same feature on recent CD players from Naim Audio, that last one really did make an audible difference for the better; all of my comments on sound quality below refer to the Apollo's performance with its display dark.

As far as the control interface is concerned, the Apollo provides only one small surprise: After a disc is loaded and the transport door closes, the player doesn't respond to further user input for about eight seconds, during which time “INITIALISING” (spelled, or rather spelt, just so) remained on the display. I could, and often did, press the start button repeatedly, but the Apollo ignored me until it was ready. The culprit, if you want to call it that, is the new Cambridge-sourced chipset and its attendant surplus of memory: Each time the user loads a new disc, the Apollo reads the whole of the CD's subcode data into memory, analyzes it,1 and then selects the most appropriate of four levels of error correction. That way, the music is never overcorrected per se, and the integrity of the original datastream is preserved.

Fig.2 shows the spectrum of the Apollo's output while it decoded dithered data representing a 1kHz sinewave at -90dBFS. The trace peaks exactly at this level and is free from harmonic spuriae, though there is a little more low-frequency noise than I usually find. Repeating the test over a wider bandwidth and with data representing a -1LSB DC offset gave a spectrum with a lower level of noise (fig.3), and without the expected ultrasonic rise due to the DAC's noiseshaping. It looks as if the Rega's DAC mutes its output when fed this signal, to give an optimistically high signal/noise ratio.

The Rega's linearity error is shown in fig.4. The output becomes increasingly dominated by noise below -100dBFS, both recorded dither and analog playback noise, with negligible error. This good DAC performance is confirmed by the waveform of an undithered 1kHz tone at exactly -90.31dBFS (fig.5), which is both symmetrical and clearly shows the three DC voltage levels that describe this signal.

Distortion levels with full-scale signals were very low, at 0.009%, though the spectrum of that distortion revealed some differences between the channels (fig.6). The sub-

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1 Very unusually, after a CD has been initialized, when you select a track, its playing time is briefly displayed.

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kept intact to the greatest extent possible. In any event, the Apollo’s eight-second wait is a mere blink of the eye compared with the best-case 27-second delay between loading a disc in the transport of my Sony SCD-777ES SACD/CD player and actually hearing music. Once again, a manufacturer has sent his wares to the most sympathetic reviewer imaginable.

From buck to cluck
From day one, the Apollo endeared itself to me—no other word for it—by cheaply doing well a great many things I consider crucial to music playback. Its rhythmic performance was strong—no surprise there, given that none of the Rega products I’ve heard have made music sound sluggish or unengaging—and its frequency range was well extended in both directions, with good balance between its strong bass registers and crisp, open-sounding trebles.

But it was the cleaness of the Apollo’s sound that most impressed me that first day. In that sense, the Apollo was audibly, obviously different from most other players. After it had undergone a weeklong break-in period in my living-room system, I brought the Apollo into my dedicated listening room and installed it in my main system. The first song I played was Roy Wood’s lovely “Whisper in the Night,” from the first album by the much-abused Electric Light Orchestra, No Answer (Epic ZK 35524). After just the first few measures I was brought up short, and compelled to switch back to the Sony for comparison’s sake: The Rega had an unambiguously lower noise floor. Through the Apollo, there was more emptiness between the notes—spaces had been filled with texture through the Sony, which I’d never noticed...

measurements, continued

jectively innocuous second harmonic was the highest in both channels, followed by the third and then the fourth harmonics. However, the right channel had a higher level of third harmonic, and featured some fifth and seventh harmonics. Admittedly, these are all at very low levels, but I prefer not to see such behavior at all. Intermodulation distortion was very low (fig.7).

Finally, I tested the Apollo’s rejection of word-clock jitter using the Miller Analyzer and a test CD-R carrying the diagnostic signal: a high-level tone at exactly one quarter the sample rate, over which has been laid the LSB toggling on and off at a low frequency, again an exact integer fraction of the sample rate. The measured jitter level was a low 293 picoseconds peak–peak. A narrowband spectral analysis of the Apollo’s analog output is shown in fig.8:

the data-related sidebands (red numeric markers) are all very low in level, with most of the jitter deriving from a pair of sidebands of unknown origin at ±1350Hz (purple “8” markers). Low-frequency sidebands can also be seen at ±51Hz (purple “1”) and ±120Hz (blue “2”), the latter obviously power-supply–related.

Overall, this is excellent measured performance, though I was a bit bothered by the difficulties the Apollo had tracking CD-Rs.

—John Atkinson
before. Consequently (or so it seemed), listening to the music was now easier: The tension that belonged in the music was still there, but the stress of listening to it was gone.

I heard much the same on "Lady Sweet," from Big Star's new album, In Spac (Rykodisc RCD 10677). A mixture of gritty electric and clean acoustic guitars played more or less in unison—the thickness of the former, the percussive qualities of the latter—has always been a hallmark of the Big Star sound, but the qualities of the individual instruments are usually hard to pick out on a lesser system. The Apollo revealed them more cleanly than anything else in the house, stripping away a lot of electric grunge from the spaces within the overall sonic tapestry (if you’ll forgive a onetime use of that foppY cliché).

HILARY HAHN’S EXQUISITE RECORDING OF ELGAR’S VIOLIN CONCERTO SOUNDED WONDERFUL AND EMOTIONALLY SATISFYING THROUGH THE APOLLO.

This effect wasn’t limited to pop recordings. In fact, the Apollo’s clean, open sound was even more pleasantly welcome with classical music. An obvious but good example came during the hushed opening measures of Strauss’s Tod und Verklärung, with Lorin Maazel and the Bavarian Radio Symphony Orchestra (BMG 68221-2). With most players, good ones included, the susurrations of the strings is hard enough to hear; with the Apollo, those sounds emerged from the darkness with all their musical meaning and sonic texture and color intact.

Hilary Hahn’s exquisite recording of Elgar’s Violin Concerto (SACD/CD, Deutsche Grammophon 00289 474 8732) is one of the most satisfying new classical releases in recent years (the CD booklet’s good art direction doesn’t hurt, either), and it sounded wonderful and emotionally satisfying through the Apollo. The player couldn’t do anything about the curious lack of texture and warmth in the orchestral instruments—the sound, while not quite horrible, is a strange mix of dark and cold, although the solo violin fares better—but it played the melodies on the disc’s “Red Book” layer with a DSD level of flow and momentum. Recent good SACD players, fed the DSD layer, did better with the performance’s sense of drama and dynamic ease, though the Apollo was at least satisfying in that regard.

Spatial performance was fine, and certainly the equal of my Sony and the Naim CD5x. With very-well-recorded orchestral music—obvious choices such as Charles Munch and the Boston Symphony’s various recordings in RCA’s early Living Stereo series—ensembles sounded convincingly wide and deep, with last-row brass players sounding as if that was where they were coming from. Percussion sounds had great specificity, such as the snare drum and triangle in the first part of the
1955 recording of Ravel's *Daphnis et Chloé* (JVC XR-0222-2).

From one disc to the next, regardless of the style of music, the Rega was clean, clear, and never boring. The only shortcoming I noted was a tendency for the trebles to sound a little too crisp on a few discs in my collection—such as David Grisman's *Bluegrass Mandolin Extravaganza*, on his own Acoustic Disc label (ACD-35). I love the version of the weird old fiddle tune "The Dusty Miller" on that album, with Ricky Skaggs and his father-in-law, Buck White—although the great mandolinist Frank Wakefield steals the show toward the end with an edgy solo that throws all caution to the wind as he bangs back and forth between major and minor voicings. But the sound got edgy, too, in a way that the more expensive Naim CD5x and Ayre AX-7c did not. No big deal—but I'd think twice before buying a Rega Apollo for a system with a relentless top end.

Because the new data-control chipset they're using contains an MP3 decoder, Rega decided to make the Apollo MP3-compatible as well. I tried it out by burning a bog-standard Fuji-film blank with some MP3 files from my iMac's music library, including Clarence and Roland White playing "Nine Pound Hammer," and another charmingly weird fiddle tune (this one with vocals), "Cluck Old Hen," by Fiddlin' Powers and Family. (The latter was transcribed from an Edison Diamond Disc—meaning we've more or less come full circle, I think.) They played without a hitch or a glitch.

A final performance note: The Rega Apollo seemed more or less blasé about the quality of the cable used to take its line-level signal to my preamp—I wound up relying on my second-hand, 2m-long Audio Note AN-Vx interconnect, if only because it was so delightfully perverse to connect a $995 CD player to my system with a cable that cost even more. But it did respond to the Ayre Myrtle Block isolation supports I've mentioned in issues past. The Blocks enhanced the Rega's performance in most ways, chief among which was the sense of musical ease and flow, although I did think the bass went slightly deeper without them. (The Apollo's own feet are standard-issue rubber things, not the fancy layer-cake jobs that Rega puts under their turntables.) Go figure.

**Wrap it up**

Rather like the Cyrus CD player I reviewed in the November 2005 *Sterophile*, the Rega Apollo seems a canny response to the challenge posed by format wars, potential obsolescence, and the declining dollar: When in doubt, spend as little as possible, striving all the while for the best quality imaginable. I mean that last bit literally: Until recently, I doubt anyone could have imagined "Red Book" CD playback this good from a sub-$1000 player.

While the Rega Apollo is free of obvious flaws, you'd be forgiven for wondering what the extra money for an Ayre AX-7c ($2950) or a Naim CD5x ($2900) might buy. For that matter, you could ask how much more could be had from Rega's own forthcoming upmarket players, which will be based on the same digital-control chipset. (The Rega Saturn, poised for release as I write this, comes immediately to mind.) I haven't heard the other new Rega machines, but as far as the others are concerned, more money can get you more texture and color, more drama, and, most important (to me, at least), more of a sense of humanness, of the human force behind every note that's sung or played. The Apollo is not lacking in any of those qualities—but it's as wrong to imply as it is naive to assume that you can't do better.

For the here and now, however—here being $1000 and now being $1000 as well—the Rega Apollo is satisfying in a way that no similarly priced player of my experience can boast. It wouldn't embarrass any system I know (save for the most irredeemably bright), and would only improve the core musical values of most. The Apollo is a surprising step forward in a field that I'd thought was empty of same, and a hell of a bargain. Very strongly recommended.
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Paul Bolin, Stereophile (April, 2003)

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Art Dudley, Stereophile (October, 2004)

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where does one start with the Moscode 401HR? With its design, which marries a tube driver stage to a MOSFET power output? Or perhaps with its designer, George Kaye, who refined Julius Futterman's OTL amplifier circuits before creating New York Audio Labs' original hybrid amplifier, the Moscode 300, in 1984?

Perhaps the most logical place to start is with the 401's "HR" designation, which honors the late Harvey "Gizmo" Rosenberg, a true audio original: champion of the Futterman OTL legacy, founder of New York Audio Labs, and patron and inspiration for George Kaye's forays into the Moscode ethos. Rosenberg hated the commoditization of hi-fi, which led to products sounding more and more like one another. Instead, he threw himself wholeheartedly into audio technology that had soul—he didn't care whether a component was practical as long as it induced passion. In the original owner's manual for the Moscode 300, lovingly included as an appendix to the 401HR's comprehensive manual, Rosenberg described a purification ritual that included warm baths, cold showers, massage, silk robes, and ritual infusions of herbs and strong drink—all to prepare the new owner to unpack the new component.

You're probably rolling your eyes at that. I did when I first read it—but I also understood what Rosenberg meant. These days, our lives present few occasions for
MOSCODE 401HR

ritual; but when you spend $4995 on a component like the 401HR (or $899 for the 300 in 1984 dollars), experiencing it for the first time ought to be special. And make no mistake—you will want to mark the entrance of the Moscode 401HR into your system with some degree of pomp and circumstance.

The ear should remain the first and last court of appeal
No one could doubt that the 401HR has tubes. George Kaye has mounted them right up front behind an etched glass panel with a glowing blue logo. The amp comes with pairs of 6H30Pi dual-triode and 6GU7 dual-triode tubes, although many other small triodes can be used. Kaye suggests that switching the voltage-gain tubes (the ones on the outer edges of the tube array) will create the most noticeable differences, and he has designed the 401HR so that it powers down when its faceplate is opened, and back up when it's closed.

The 401HR also has an Auto Filament Switcher that detects center-tapped filament tubes (such as the 12AU7) and switches from a two- to a three-pin filament circuit. That's in keeping with Kaye's contention that the 401HR is "tubes without the anxiety; tubes without the overhead." The 401HR's wide range of usable tubes means that consumers can rest assured of being able to employ pretty much any available dual triode, and the amp's auto-sensing and auto-biasing circuits will remove most of the fiddle factor.
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That's the Cliff Notes version. Kaye also emphasizes good circuit layout that places the output-stage transistors and the power supply all on a single circuit board with short signal paths and wide traces ("lots of copper"), as well as extensive power regulation that allows the tubes' voltage swing to go way past what the output stage can do, which means no compression," and "exceptional" capacitors in its output stage. Kaye is voluble on that last point: "The Moscode 300 had about 34,000μF of storage capacity; this has 176,000μF—let's say 88,000μF per channel. That lowers the output impedance of the power supply, so the negative feedback loop's not working to make up for losses. It's not straining to get power to your speakers, which is why it has such effortless presentation."

For the extended-play version of the 401HR's technical specs, check out Moscode's website, www.moscode.com/moscode_amplifiers.htm. While you're there, you'll note that the 401HR is for sale only via the website, and is temporarily for sale at $4995, with a 33%-day guarantee of satisfaction or your money back.

Don't play what's there, play what's not there

Setting up the 401HR is not difficult, though you do have to insert the tubes yourself. If you've never done this before, it's never that big a deal, and the 401HR's flip-down tube door makes it even simpler—as long as you put the 6H30P and the 6CG7 tubes in their mirrored positions. (Just read the labels on the tube boxes, which tell you which socket to put each tube in—even guys can read the manual.)

You'll also discover that the 401HR comes equipped with Edison-Price binding posts, which, in addition to being made of unplated, great-sounding copper, are refreshingly simple to tighten with your fingers.

And I hate to say this, after telling

impedance. The amplifier more than meets its specified power, giving out no less than 250Wpc into 8 ohms (24dBW) and 390Wpc into 4 ohms (22.9dBW) at 1% THD. It faltered into 2 ohms, however, giving out just 130W into this load (15.1dBW) at the same 1% THD point, even with just one channel driven. You can also see from this graph that the THD percentage starts to increase at a much lower power level than with the higher impedances.

The downward slope below 2–3W of the traces in fig.4 indicates that the measurement is dominated by noise at these power levels. I therefore assessed how the THD+N percentage varied with frequency at a 6V output level, equivalent to 4.5W into 8 ohms. The results are shown in fig.5: again, the 401HR is clearly uncomfortable driving 2 ohms, but the expected rise in THD at high frequencies is lower than I usually see.

The THD level into 8 and 4 ohms is low, but what also matters is the content of the distortion. The lower trace in fig.6 shows the distortion waveform produced with the Moscode driving a 1kHz tone at 4.4W into 8 ohms. As well as a little noise, the waveform shape indicates that the distortion is primarily second- and third-harmonic in nature, which, all things being equal, is subjectively benign. However, when the output current is doubled by halving the load impedance, the smooth distortion waveform starts to be broken up by higher-order harmonics (fig.7). It is possible that this behavior is what gave rise to WP's feeling that the 401HR is a little "opinionated."

This can also be seen in the spectrum of the amplifier's output while it drives a low-frequency tone (fig.8) and a
you to make a ritual of installing the darn thing, but it’s going to take about 40 hours for the 401HR to run in and start sounding its best. Don’t worry—it sounds special from the get-go, just not as good as it’s going to.

**Heat the beat and the rest’ll turn sweet**

George Kaye knows his amp. Effortless ain’t the half of it. When I pressed Play on Manu Katché’s Neighborhood (CD, ECM 1896), Marcin Wasilewski’s piano leapt out of the Dynaudio Special Twenty-Five loudspeakers. No, *leapt* isn’t quite the word, but neither is *thundered* or *roared* or anything else that connotes bombast. It’s just that suddenly there was a piano in the room, followed by cymbals and an acoustic bass and, suddenly, a very real—and real-sized—trap set.

Yes, I know this is all part of the miracle we call high-fidelity music reproduction. There was no band in my listening room, of course, but the Moscode 401HR came frighteningly close to making me believe there was, not simply because it sounded real but also because it felt real. It possessed that jump factor to such a stunning degree that it felt as if the moving air creating the sounds was physically striking me. It couldn’t have been that, of course. I wasn’t playing the music at trouser-flapping volumes, nor was I listening through loudspeakers capable of creating such a palpable breeze. Something different, however, was definitely going on.

If by *effortless* Kaye means that the 401HR produced dynamic extremes and the shadings between them to an extraordinary degree, he’s right on the money. If you like background music, don’t go near the Moscode—you’ll hate it. It celebrated the explosion of sound when Manu Katché taps his Zildjian cymbals or the rim of his Remo tom-tom. The 401HR illuminated the fuzzy burr of trumpeter Tomasz Stanko’s midband tone (fig.9) at high powers into 8 and 4 ohms, respectively. At these high powers, the more subjectively annoying fifth, seventh, and ninth harmonics appear. However, intermodulation distortion, even at a level just below visible waveform clipping, is moderately low, though some high-order components are evident (fig.10).

![Graph](image1)

**The Moscode 401HR offers pretty good measured performance, though it is clearly not happy driving loads below 4 ohms. It also looks the business, with that seductive glass front panel softly glowing blue. —John Atkinson**

![Graph](image2)
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breathy embouchure as he softly plays on “Lullaby,” and captured the icy perfection of his fat, piercing projection later in the same solo. It sucked me into the liquid runs and explosions of triplets that Wasilewski produces on his Yamaha concert grand. And, for Pete’s sake, it definitely did not let me ignore Katché’s pulsing, skittering, rhythmic time keeping. No, if music belongs behind the other things you’re doing, don’t even audition the 401HR—you’ll hate it.

When windbag reviewers go on and on (and on and on) about dynamic contrast, we audiophiles frequently assume that’s code for plays loud—which is not, in and of itself, a bad thing. However, these days, there’s so little dynamic range in most recordings that it doesn’t really matter if a hi-fi plays loud or not, it’ll sound loud. John Atkinson wrote about this in 1999 (www.stereophile.com/asweseet/177), and it may be even worse today (www.cdmasterservices.com/dynamericangle.htm). A better yardstick for measuring dynamic performance is how much variation a component wrings from recordings that actually possess gradations in loudness—and the recordings whose dynamic ranges still manage to impress me aren’t necessarily those that threaten my lease.

One of my favorite such tests is a recording of Biber’s Mysteriensonaten, by Marianne Rónéz and Affretti Musicali (CD, Basic Edition 910 029-2), that Art Dudley kindly sent me a few years ago. It’s essentially a series of violin sonatas backed by bass continuo (mostly chamber organ, but sometimes theorbo or viola da gamba). Hardly a dynamic treasure chest, you’d probably imagine—and, with some systems, you’d be right. But get yourself a fat pipe to pump the info through and it’s compelling stuff. Rónéz uses her bow to great effect, coaxing an astonishing panoply of tones and consonances from her violin, and her continuo players are masters at supporting and pushing her along. It’s a rich and compelling experience—at least, that’s what the 401HR told me.

Densely produced pop tracks, such as Earth, Wind & Fire’s “Shining Star,” from That’s the Way of the World (SACD, Mobile Fidelity UD SACD 2016), were also delightful—layer upon layer of interlocking rhythm guitars and horn lines created a deep, continuously unfolding sonic universe. After nearly 30 years, I’m still not sure I like the music, but I sure do love the way it sounds. The Moscode 401HR, being an amplifier that seemingly shares Harvey Rosenberg’s preference for passion over reason, makes that disconnection seem weirdly petty—how could I not love something that sounds as good as “Shining Star”?

**What is best in music is not to be found in the notes**

While I enjoyed the Moscode 401HR during its solo audition, I was freaking out a tad trying to imagine what I could compare it to when it came time to evaluate it against another amplifier of similar aspirations and/or price—one that had been reviewed in Stereophile and thus was a “known” quantity. Finally, the penny dropped and I realized that my own reference amp, the one I actually own and listen to when I don’t have any deadlines, was a hybrid tube/solid-state device with a monster power supply and a retail price slightly over $5000 when it was last available: the Musical Fidelity Nu-Vista 300, reviewed by Michael Fremer in December 1999 (www.stereophile.com/tube-poweramps/205). Actually using my reference as a reference—what a concept!

Despite their surface similarities, the Musical Fidelity and Moscode amps were quite different in performance. Both delivered big, beefy sound, as you’d expect from 200Wpc and 300Wpc amplifiers. Neither ran out of juice with either the Dynaudio Special Twenty-Five or Thiel CS2.4 speakers, nor would I imagine them doing so with nearly any speaker I could have paired them with, short of the original Thiel CS5s played at Larry Archibald New Year’s Eve Party Levels. (Long story short: big room, power-hungry speakers, and John Atkinson and yours truly making a run to Stereophile HQ for some seriously heavy metal just before midnight.) However, that said, the 401HR, which is rated at 100Wpc less than the Musical Fidelity Nu-Vista 300, actually sounded bigger. Not louder, exactly, just more present, especially on the Katché disc, where the dynamic range—the swings between loud and soft—seemed more extreme. A point in the Moscode’s favor, I think.

The Nu-Vista 300, however, sounded sweeter and more “civilized” at the higher frequencies—in the cymbal overtones and saxophone harmonics, for example. The Moscode had a bit more of a “burr” at the leading edges of the notes. Was this a sign of greater accuracy? Did the 401HR have a lower noise floor that allowed me to hear details that the Nu-Vista obscured? I went back and forth on this one. On the one hand, the Moscode seemed very slightly rougher, but sometimes smoothness is simply a loss of detail. (That “burr” can be tempered somewhat...)

---

**Associated Equipment**

**Digital Source**: Ayre CS-xe universal player.

**Preamp**: Conrad-Johnson CT5.

**Power Amplifier**: Musical Fidelity Nu-Vista 300.

**Loudspeakers**: Dynaudio Special Twenty-Five, Thiel CS2.4.


**Accessories**: Audience adeptResponse power conditioner, Shunyata Research Hydra power-distribution system; OSAR Selway/Magruder equipment racks; Ayre Myrtle Wood Blocks.

---

**Wes Phillips**

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by trying other types of voltage-gain tubes, but I confined my comparison audition to the stock set. Perhaps a "Follow-Up" on tube differences is in order.)

Here's why I went back and forth on whether the Moscode's sound was a bug or a feature: While some listeners (perhaps even I, every other day) might prefer the smoother presentation of the Musical Fidelity, I felt the Moscode had more life and snap. It was more exciting to listen to. That doesn't mean it lacked nuance, as Biber's Mystery Sonatas clearly showed. The textures of horsehair on string, of wind sliding through stops, of theorbo theorboing, were vivid and warm. Here, I actually felt that the Nu-Vista was limiting the information flow. The presentation was flatter and less involving—very slightly less involving, but still.

**Sometimes you have to play a long time to be able to play like yourself**

The problem with high-performance audio is the same problem that high-performance anything faces: The good is so much better than the norm that determining what's best is impossible—and perhaps beside the point. Read the reviews and you can be convinced that there's a new "must-have" every month, especially if you don't know what it is you want.

There are lots of superb power amplifiers at the $5000 price point, and I can't actually think of a bad one. Almost all of them are well built, should last a long time, and probably measure well. What separates the Moscode 401HR from the pack is that it is different—like its inspiration, Harvey Rosenberg, it is unapologetically and enthusiastically what it is.

What it is is robust, full-bodied, and perhaps a little opinionated. It is also delicate and, to my ears at least, true to the music. I can't tell you that it's true to the music's intent—for one thing, I have no clue that I'd know what that is—but what the 401HR does sounds right to me.

In a world where most things sound good, sounding right seems like a giant step forward—or, at least, away from the pack. Whether you observe any specific ritual or not, Harvey Rosenberg was right about one thing: There are some experiences worth preparing yourself for, and auditioning a truly special amplifier such as the Moscode 401HR is one of them.
Each time I attend Stereophile's annual Home Entertainment Show, I look forward to two things. The first is the opportunity to perform classic and original jazz music with John Atkinson and Immedia's Allen Perkins. The second is to seek out the most exciting new, affordable speakers to review over the following year. Both buttons were pressed for me quite admirably during HE2005 at the New York Hilton, but this time it was not an affordable speaker that most impressed me.

I entered the DK Design room, where a very rugged and sexy-looking amplifier was making remarkable sound driving a pair of large Von Schweikert speakers. When I inquired about the amplifier's provenance, DK Design explained to me that it had been designed in the US and manufactured in China. They also told me that I was not just listening to a power amplifier. The DK Design Reference was actually a hybrid integrated amp with a tube line stage and a 150Wpc solid-state power-amp section. It also included a solid-state moving-magnet phono stage, isolated from the rest of the amp's circuitry and accessible via jumper clips or an additional pair of interconnects. The VS.1 Reference also had a full-function remote control. DK Design's then-owner, Daniel Khesin, asked me to guess the price. From the construction quality, features, and power rating—not to mention
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Technology is wonderful, but when it comes to real innovation - something which is completely new, one designer comes to mind more often than any other, that is Tom Evans.

Those in the know about high quality phono playback have heard about the now legendary Tom Evans Design Groove ($3,600) and Groove Plus ($7,000) phono stages. To give you some basis for comparison, I recently matched the Groove Plus against Stereophile's most highly rated phono stage which sells for $32,500. The groove plus a mere $7,000, was ten times quieter and sounded infinitely more life-like than the hometown favorite in every possible way.

Following on the Groove Plus, Tom Evans created the Vibe Line Stage ($4,600), the Pulse Power Supply, the Linear A Amplifier ($8,500) and most recently, the Linear B mono amplifiers ($16,000/pair).

The point, as made in the former review is "Each one of these products is unique in concept & design compared to anything else I am aware of. These Tom Evans designs are the real deal. They are true originals... Or in the words of my friend--TAS reviewer & fellow moonie Stephæn Harrell [system below with full complement of TEAD gear]--after hearing the full suite of Tom Evans equipment in his own system: "This isn't just HiFi; this is stupe-Fi-ing!"

As we both were in our respective systems, you'll most likely be stunned too when you hear the whole Tom Evans stack of gear playing the tunes."

We couldn't agree more.

Andy Singer
the quality of the sound—I figured I was listening to an amplifier that would retail somewhere between $5000 and $7000. When I heard that the price was $2995, I insisted on getting a review sample right away.

Company
Well, it took me a while to get that sample. A month or so after HE2005, in July, founder Daniel Khesin sold DK Design to the LSA Group, a speaker company founded by designer Larry Staples, formerly director of sales for Thiel Audio. Khesin wanted to focus his time on his other investments, and Staples had been very impressed with DK’s amplifiers, having used them in the design of his own speakers.

The Mk.III version of the VS.1 Reference—which now costs $3195—features several upgrades from the Mk.II I heard at HE2005. The two most significant changes are parts upgrades, most notably the replacing of inexpensive electrolytics with Car- das coupling capacitors intended to pass AC and shunt DC between the amp and preamp stages, and higher-quality speaker binding posts. There is also the addition of a Sub Out output, which permits passthrough to a powered subwoofer.

The large, sleek, visually stunning VS.1 Reference Mk.III features a tube line stage with 6922 triodes and partially dual-mono amplifier circuitry with Solen output devices. DK claims that the amp’s low output impedance facilitates power delivery and dynamic performance. The integrated has one balanced line input, three single-ended line inputs, and one phono input.

The VS.1 Reference is rated at 150Wpc into 8 ohms and 300Wpc at 8 ohms.

**Measurements**

Before performing any measurements on it, I pre-conditioned the DK Design VS.1 Reference Mk.III by running it at 50Wpc (one-third the specified power) with both channels driven into 8 ohms for 60 minutes. The THD+noise remained at a highish 0.2% throughout this period, after which the heatsinks on the amplifier’s sides measured around 55°C. The front third of the heatsinks remained cool, however, as no active devices are attached to these.

The fact that the phono stage has its own output, usually connected by jumpers to the Aux 1 line input, enabled me to look at its performance in detail. The phono input preserved absolute polarity (ie, was noninverting). The input impedance was higher than the specified 47k ohms over most of the audioband, at 97k ohms, though this dropped to 43k ohms at 20kHz. The voltage gain was 37.9dB, suggesting that the input is optimized for high-output moving-magnet cartridges. Reinforcing this impression was the phono stage’s superb overload margins: no less than 28dB in the bass and midrange, and even 27.35dB at 20kHz (all figures ref. 5mV at 1kHz).

Channel separation was better than 80dB above 2kHz. The phono input’s signal/noise ratio was 52.2dB (again ref. 5mV input at 1kHz) with a wideband, unweighted measureement. Switching in an A-weighting filter increased this to a good 79.4dB. The RIAA error (fig.1) suffered from a mild boost through the bass and a slightly rising response above the audioband. The former will be audible, the latter not. Distortion was very low, though the spectrum of a 1kHz tone at 13mV input (fig.2) had some fifth harmonic present at the same low level of the second harmonic (~90dB, 0.003%). The phono stage’s output impedance was a moderately low 445 ohms at all audio frequencies.

Turning to the VS.1’s line and power-amplifier sections, the amplifier’s maximum voltage gain was high through its RCA line inputs, at 48.9dB into 8 ohms. Peculiarly, the gain through the balanced XLR input was 12dB lower. Both this and the preceding figure changed very slightly whenever the level of the input signal was changed, suggesting some marginal instability. Both the RCA and XLR inputs inverted signal polarity, the latter driven with pin 2 hot. The input impedance of the unbalanced RCA jacks was lower than specified at 23.4k ohms at 1kHz, this rising to 31k ohms at the upper and lower edges of the audioband.

The right channel’s output impedance was moderate for a solid-state design, at 0.12 ohm at 20Hz and 1kHz, this rising slightly to 0.16 ohm at 20kHz. The left channel’s output impedance was twice this figure, suggesting some QA problems, and gave rise to ±0.2dB response variations with our standard simulated loudspeaker (fig.3, top trace.

---

**Fig.1** DK Design VS.1 Reference Mk.III, phono-input RIAA response (0.5dB/vertical div.).

**Fig.2** DK Design VS.1 Reference Mk.III, spectrum of 1kHz sinewave, DC–20kHz, at 13mV input level (linear frequency scale).
DK DESIGN VS.1 REFERENCE MK.III

into 4 ohms. DK Design claims it can produce an undistorted 800W into 1.3 ohms. We'll see what JA's test-bench measurements have to say about that.

The VS.1 Reference's construction and parts qualities, ruggedness, and attention to detail, both inside and out, remind me more of products from Krell and Audio Research than of other lower-priced designs I've seen from China. The remote control is particularly user friendly. I have little patience for remotes that don't function unless they're held in precisely the horizontal plane of and pointed directly at the component. But while fumbling to remove the VS.1's remote from its plastic bag, I accidentally pressed a button that turned the amplifier on, despite the fact that I was 15' away from the amplifier and at a 60° angle to its face.

The VS.1 has a few ergonomic quirks that could be improved on. The elaborate heatsinks are nearly sharp as knives, and the lack of handles made removing this 77-lb amp from its box very tricky, even with a helper. Nor does the amplifier's face reveal much; the first few times I used it, I wasn't sure if I was in Operate or Mute mode.

ISA Group head Larry Staples reminisced to me about his time as an audio retailer many years ago, when he loved to encourage customers to pair Conrad-Johnson tube preamps with solid-state Eagle 2 amplifiers, designed by John Iverson. [No relation to Stereophile's esteemed Web

measurements, continued.

at 2kHz). This graph also shows a channel imbalance of 0.25dB and a fairly quick ultrasonic rolloff, with the amplifier's output down 0.25dB into 8 ohms at 20kHz and its -3dB point at 64kHz, resulting in a 10kHz squarewave response with rounded leading edges (fig.4). This will not be enough to correlate with BJR's finding the amplifier's highs to lack air, however. Fig.3 was taken with an unbalanced input and with the volume control at 12:00; increasing it to its maximum setting and replotting the frequency response at the same output level gave a 0.5dB channel imbalance in the opposite direction—ie, the right channel is now louder than the left—and the -3dB point moved up to 116kHz (not shown). Driving the amplifier via its balanced input, again with the volume control at its maximum setting, revealed a 1dB difference in channel gain, this time in favor of the left channel.

Measuring the crosstalk was complicated by the VS.1's sensitivity to the grounding arrangement between the amplifier and my Audio Precision System One test set. When the grounding was optimal, channel separation via the unbalanced inputs was better than 65dB below 1kHz, but suffered from capacitive coupling, reducing the separation to 40dB at 20kHz (fig.5). The S/N ratio (ref. 2.83V into 8 ohms), taken with the unbalanced input shorted and the volume control at its maximum, was moderate at 63.8dB, wideband, unweighted, this increasing slightly to 70.2dB when A-weighted.

The VS.1's preamp tubes are somewhat microphonic—

rion to 40dB at 20kHz (fig.5). The S/N ratio (ref. 2.83V into 8 ohms), taken with the unbalanced input shorted and the volume control at its maximum, was moderate at 63.8dB, wideband, unweighted, this increasing slightly to 70.2dB when A-weighted.

The VS.1's preamp tubes are somewhat microphonic—

Fig.3 DK Design VS.1 Reference MK.III, frequency response at 2.83V into (from top to bottom at 2kHz): simulated loudspeaker load, 8, 4, 2 ohms (0.5dB/vertical div., right channel dashed).

Fig.4 DK Design VS.1 Reference MK.III, small-signal 10kHz squarewave into 8 ohms.

Fig.5 DK Design VS.1 Reference MK.III, line-input channel separation (10dB/vertical div.).

Fig.6 DK Design VS.1 Reference MK.III, crosstalk dBr vs Frequency (Hz).

Fig.7 DK Design VS.1 Reference MK.III, small-signal 10kHz squarewave into 8 ohms.

Fig.8 DK Design VS.1 Reference MK.III, line-input channel separation (10dB/vertical div.).

Music
Larry Staples reminisced to me about his time as an audio retailer many years ago, when he loved to encourage customers to pair Conrad-Johnson tube preamps with solid-state Eagle 2 amplifiers, designed by John Iverson. [No relation to Stereophile's esteemed Web
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Monkey—Ed] He liked the idea of giving customers "tube delicacy coupled with solid-state slam and control, the best of both," in a relatively inexpensive package. Being the former owner of a C-J tube preamp who reviewed an Eagle amp early in my writing career, I understand where Staples is coming from. He feels his VS.1 Reference Mk.III also achieves those objectives.

The midrange qualities of the VS.1 Mk.III indicated that the integrated amp possessed some of the hallmark attributes of a high-quality tube preamp. Every vocal recording I tried with the VS.1 was silky, rich, uncolored, and captivating. My notes from listening to the opening track of Brian Wilson's SMILE (CD, Nonesuch 79846-2), as well as all tracks from Suzzy and Maggie Roche's Why the Long Face? (CD, Red House RHR CD 719), read the same: "angelic holographic blended harmonies." Male vocals were equally enticing. Mighty Sam McClain's warm, guttural growl on Give It Up to Love (CD, JVC JVCXR 0012-3) was silky and organic.

The VS.1's high-frequency performance revealed its most noticeable shortcoming, but it was a minor one. Although the high frequencies overall were detailed and uncolored, the extreme top end seemed to lack air and was a touch opaque. Not that this detracted from musical enjoyment on any recording. On all closely miked female vocals, sibilants were clear, crisp, and distinct. Keith Jarrett's piano on Radiance (CD, ECM 1960/1961) was revealed to have uncolored, delicate, and shimmering harmonics, with superb transient articulation. Tom Chiu's violin on David Chesky's Violin Concerto, from the CD layer of the composer's Area 31 hybrid SACD (Chesky SACD288), was biting yet sweet, and all the upper partials of the instrument's higher registers were intact. It seemed as if Chiu was playing in a concert hall with excellent acoustics, but with a bit too many heavy curtains drawn.

The DK Design's bass response was quite good, although with a slight tapping the glass envelopes with a pencil gave an easily measurable signal at the amplifier's output. However, any audible effects should be minimized by the facts that the tubes are shielded by the top cover—the mesh openings in the cover actually go over the transformers and there is an internal wall between the tube circuit and the transformers.

Fig.6 shows how the THD+noise percentage in the VS.1's output varied with output power. The VS.1 more than meets its power specification, with a measured clipping level of 205W/23.1dBW into 8 ohms and 330W/22.2dBw into 4 ohms, both channels driven. Into 2 ohms with one channel driven, the amplifier gave out 500W (21dBW)!

The rise in THD+N above a couple of watts' output in fig.6 suggests the VS.1 is a low-negative-feedback design. I measured how the THD+N percentage changed with frequency at 5V output, a level that fig.6 suggests is where the distortion is just starting to rise above the background noise. The results are shown in fig.7: the left and right channels are different, the right channel either less noisy or more linear over most of the audioband. Above 10kHz, however, both channels show the same rise in THD, sumably due to the circuit's restricted open-loop gain-bandwidth product.

At small-signal levels, the VS.1's distortion is predominantly second-harmonic (fig.8), though a discontinuity can be seen at the negative-positive half-cycle zero crossing...
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Warmth in the midrange region that was broadly and evenly distributed and added no severe colorations to any music I played. Ray Brown's bass on Sonny Rollins' Way Out West (CD, JVC VICJ 60083) was a bit warm, and the solo double-bass passages in George Crumb's Quest (CD, Bridge 9069) had a bit too much bloom. The lower-register organ-pedal notes in John Rutter's Requiem (CD, Reference RR57-CD) were natural and rumbling.

Electronic bass was also fairly impressive. The bass synthesizer on several tracks of Sade's Love Deluxe (CD, Epic EK 53178) was a little warm but uniform across its pitch range, and never slow or sluggish, and the lower-register descending portamento on "Feel No Pain" was appropriately forceful and rumbly. The electronic drums and synths on Kraftwerk's Minimum/Maximum (CD, EMI ASW 60611) had tremendous low-end slam, and its reproduction seemed effortless even at high volumes. This recording also showed off the VS.1 Reference's lighting-fast ability to render rapid transients without any sense of blunting or artificial edge. My listening note: "Chills!"

Soundstaging was one of the VS.1's greatest strengths. All vocals in Rutter's Requiem were layered holographically across and into the wide, deep stage, and it was easy to discern the acoustic of the church that had served as the recording venue. When I played one of my sonic blockbusters—Stravinsky's The Firebird, with Antal Dorati conducting the London Symphony on a Mercury Living Presence LP (90226)—the VS.1 Reference spotlighted an incredibly realistic bass drum, but it was the rendition of the soundstage that dropped my jaw. My notes: "The stage! The stage!! Hall sound, room ambience, wall reflections, depth, width, specificity, and the speakers disappear."

The Stravinsky also revealed the VS.1's schizophrenic personality when it came to rendering wide dynamic swings. With such bombastic, highly modulated orchestral works, dynamics were respectable but

Point. This behavior suggests an inadequate output-stage bias, especially as it disappears at higher output levels, where the only significant harmonics that can be seen are the second and third (fig.9), which will ameliorate their rather high level. The DK amplifier stumbled a little on the grueling HF intermodulation test (fig.10), an equal mix of 19kHz and 20kHz tones at a level just below visible clipping on the oscilloscope screen producing a 1kHz difference tone at -56dB (0.15%). Note also the appearance of ±120Hz sidebands to either side of the main spectral lines in this graph, as well as the beginning of some noise modulation. The amplifier is obviously working hard under these conditions.

The DK Design VS.1 Reference Mk.III offers a lot of power in a relatively compact package, and has a bombproof phono stage. However, I was somewhat bothered by the measured differences between its two line-input channels and by its slightly unstable gain.

—John Atkinson

![The VS.1's driver stage features a pair of 6922 tubes, mounted in circular heatsinks.](image-url)
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- ACOUSTECH PH-1P
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- MANLEY STEELHEAD
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- PARASOUND ZPHONO
  - $150

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**and Cartridges**

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- KOETSU URUSHI VERMILLION
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- KOETSU ROSEWOOD SIGNATURE PLATINUM
  - $5,500

- CLEARAUDIO GOLDFINGER
  - $8,000

- SHELTER 501.II MC
  - $850

**Editors' choice - the absolute sound**

- KOETSU VERMILLION
  - $4,000

- PLATINUM
  - $5,500

- GOLDFINGER
  - $8,000

- SHELTER 501.II MC
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not very impressive at either extreme; the range seemed to be from pp to ff. However, with well-recorded chamber recordings that feature loud blasts from a few instruments and considerable use of silence—such as Crumb’s Quest or Tomiko Kohjiba’s The Transmigration of the Soul, from Festival (CD, Stereophile STPH007-2)—the dynamics bloomed and were staggeringly realistic, linear, and wide, from the faintest ppp subtleties to the forte-fortissimos.

That Kohjiba recording put in perspective all of the VS.1 Reference’s key attributes. Carol Wincenc’s flute was very natural, even though its upper partials were slightly truncated, and the cellos sawed and growled with a delicate blend of wood, rosin, and silk. I could easily hear the inner detail from individual instruments, and the timbres sounded realistic if a bit warm. Triangle partials were there but muted. The VS.1’s moving-magnet phono stage proved to be no cheap add-on, but cut from the same sonic cloth as the rest of the amplification stage. John Coltrane’s tenor sax on Miles Davis’ Kind of Blue (LP, Columbia/Classic CS 8163) was breathy, woody, vibrant, and rich, and Bill Evans’ piano solos were appropriately tinkly, airy, and delicate.

Rollin’, rollin’, rollin’... I spent a good bit of time comparing the VS.1 Mk.III’s performance with its stock Chinese tubes and with NOS Siemens tubes, which Larry Staples had stressed would significantly improve its performance. There was indeed an improvement with the NOS tubes, though a much subtler one than I’d expected. The character of the VS.1’s sound didn’t change, but there was a little more openness and delicacy in the highs. I replayed the aforementioned recordings of female vocal and noticed that sibilants were delicate and more extended in frequency. I noticed a similar effect on percussion; Ginger Baker’s “cymbals” (a Cockney percussion instrument), from his trio’s Going Back Home (CD, Atlantic 82652-2), were more detailed, realistic, and less opaque. In short, tube rollers should notice an improvement with NOS Siemens tubes, but I don’t feel it’s necessary to replace the stock Chinese tubes in order to achieve the essential benefits of the VS.1 Mk.III.

**Comparisons**

I compared the DK Design VS.1 Reference Mk.III ($3195) with my reference affordable integrated amplifier, the Creek 5350SE ($1500), and my DK’s, but its low-level dynamic articulation was superior. Bass was tighter and much more forceful through the Creek, with superior high-level dynamics and more “kick.”

**THE DK DESIGN VS.1 REFERENCE MK.III INTEGRATED AMPLIFIER IS NOT PERFECT, BUT IT HAS MANY STRENGTHS AND FEW SHORTCOMINGS.**

The combo of Audio Valve Eklipse and ARC VT100 Mk.II had a tight, round bass presentation that was not as warm as the DK’s bass. The Eklipse-VT100 also exhibited more detail and midrange ambience, and was as rich and holographic as the DK. High frequencies were more extended than through the DK, but with no trace of hardness. Transients were fast, but an order of magnitude more delicate and sophisticated. The Eklipse-and-VT100’s high-level dynamics were equal to the Creek’s but superior to the DK’s, and their inner detailing and low-level dynamic articulation were superior to both.

**Final words**

The DK Design VS.1 Reference Mk.III integrated amplifier is not perfect, but it has many strengths and few shortcomings. Most important, it is an extraordinary value at $3195—a thoughtfully designed and well-constructed blend of tube and solid-state electronics (with a phono stage) that can deliver a lot of power to a wide range of speaker loads. Let’s say you’ve set your eye on a full-range speaker in the $5000–$10,000/pair range, and you figure that, including interconnects, the preamp and amp set you back anywhere from $6000 to $8000, which you can’t quite swing right now. Well, the DK Design VS.1 Reference Mk.III might be the way you can afford those speakers sooner than you thought. Later on, you can always trade in the DK for those more expensive separates you originally considered. But you might just conclude that you no longer want—or need—to make that “upgrade.”
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EQUIPMENT REPORT

EICO
HF-81
INTEGRATED AMPLIFIER

Peter Breuninger

The EICO HF-81 integrated amplifier

DESCRIPTION Tubed integrated amplifier. Tube complement: four ECC83/12AX7, four EL84/613Q5, two EZ81. Maximum output power: 14Wpc (11.5dBW) continuous into rated load. Frequency response (at 1W into 8 ohms): 10Hz–100kHz, ±0.5dB. Tone control range: ±15dB at 50Hz and 10kHz. Harmonic distortion: <1% at 8W, 30Hz–10kHz, at 10W, 50Hz–5kHz. IM distortion (60Hz and 6kHz at 4:1): 2% at 14W, 0.05% at 5W. Sensitivity (input for 14W): mag phono 4mV, tape head 2mV, Mic 5mV, Aux and tuners 500mV. Speaker connections: 8 16, 32 ohms.

DIMENSIONS 15" (385mm) W by 4¾" (120mm) H by 10¾" (270mm)
D. Weight: 24 lbs (10.9kg).

SERIAL NUMBER OF UNIT REVIEWED None found.

PRICE ca 1960: $109.95 assembled, $69.95 kit.


If you spotted an EICO HF-81 at the local Goodwill, you'd think nothing of this plain-Jane integrated amplifier in its nondescript gray case. But if you kept on walking, you would have passed up one of the best-kept audio secrets of all time. The HF-81 hails from hi-fi's pioneer days, before chromed chassis and slick Mac transformers. It isn't ultracool-looking, like early Marantz or McIntosh gear. It doesn't have the nostalgia factor of a Fisher. It's not a supercheap eBay steal like a Stromberg-Carlson or a Heathkit. So what's the deal?

The EICO HF-81 is simply a fantastic-sounding amplifier that, properly restored, can sound better than most any single-ended triode (SET) amp of similar power.

Strong words, I know, from this audio loon. But I am amazed at the level of performance this old stuff has. We know that recordings from the 1950s and '60s can sound spectacular. If the electronics gear back then could get so much into the recording, it makes sense that it can get it out on playback just as well.

The HF-81 has a cult following on the Internet. I got 1060 Google hits for "EICO HF-81," and the first one listed was http://home.earthlink.net/~eico_hf81. Kelly Holsten was so impressed with his HF-81 that he built this website to tell the world about how shockingly good it sounds. Holsten noted every step of his restoration, with trials and errors and parts substitutions galore. I
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- Wide bandwidth (4Hz to 85 kHz) for true bass, glorious highs and mids, and all the magic of tubes.
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don't recommend you do this unless you're willing to invest lots of time in learning the process and have the money to set up a fully equipped bench with repair manuals (the 1956 TT4 RCA Transmitting Tube Manual, etc.) and tons of parts.

But what drove Holsten to do this? What's the fuss really about?

The EICO HF-81
EICO, or the Electronics Instrument Company, sprang to life in 1945 as a manufacturer of test instruments in Brooklyn, New York, and later moved to Long Island City. They began producing home audio components in the mid to late 1950s, as high-quality sound reproduction morphed from movie theaters into home radio into standalone sound systems designed to simulate live musicians performing in your living room.

Remember that episode of The Dick Van Dyke Show in which Jerry, the dentist who lived next door, was raving about his hi-fi? Dick was completely envious, and Laura thought both of them were nuts. The point is, in the 1960s hi-fi was a national phenomenon, and companies like EICO sprang to life in 1945 as a manufacturer of test instruments in Brooklyn, New York...

We were swept away by the music and the sound, and the world changed. That clear, punchy, driving guitar signature that already had the electronics know-how—such as EICO—were keen to enter this developing market.

The HF-81 was introduced in 1959 and marked the beginning of the stereo era. It's a low-powered amplifier by today's standards, but in its time, its 14Wpc mated well with the horn speakers of the late 1950s and early '60s. The HF-81 has two push-pull Williamson amplifier circuits and a stereo control center on a single chassis. Its design is based on the venerable 6BQ5/EL84 output tube, made famous by the British invasion and folks like George Harrison, who plugged his Gretsch Country Gentleman guitar into a Vox AC-30 amp using four EL84s.

Although it does have 32 and 16 ohm output transformer taps, I measured the EICO HF-81 from its 8 and 4 ohm taps only, feeling that these will be optimal for use with modern speakers such as the mbls PB used for his auditioning. While I like the positive electrical connection terminal strips allow, those on the HF-81 are too close together to accept good spades, such as the Kimbers. I therefore used bare wire wrapped around the screws, but if you do likewise, be careful you don't short the live outputs with stray whiskers of wire.

I didn't measure the phono input. Those measurements will be included in the Web reprint of this review. An unexpected problem arose during the testing, due to the fact that the HF-81's Power switch is at the leftmost rotation of its right-channel Treble control. Consistently resetting this control to its center point after turn-on was an exercise in futility. In the following graphs, you get my best shot at this task.

The HF-81's maximum voltage gain was modest, at 26.1dB into 8 ohms from the 8 ohm tap, 23.3dB from the 4 ohm tap. The amplifier preserved absolute polarity (ie, was noninverting), and the input impedance was a very high 350k ohms at 1kHz, rising to 380k ohms at 20Hz and dropping to a still high 240k ohms at 20kHz. The midrange output impedance was relatively low for a tube design, at 0.95 ohm and 0.75 ohm from the 8 and 4 ohm taps, respectively. There was a slight rise at 20Hz...
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able control. Each time you turn off the HF-81, you lose your high-frequency setting. When I found a "neutral" setting, I marked the faceplate. The HF-81 is hard-core vintage.

The HF-81's low-level inputs are for tape head, magnetic phono cartridge, and microphone. In 1959, you had the option of outputting your open-reel tape heads directly to the preamplifier. The high-level inputs are Aux A and B, FM, AM, and FM Multiplex.

The versatile HF-81 could be used to convert a mono to a stereo system. Throwing a switch on the EICO allowed the HF-81 to drive its own amplifiers from one preamp section and an external mono amplifier from the other. The HF-81 also has a switch on the top of its chassis that can bridge the two amps to give 28W of mono output power. By today's minimalist standards, the HF-81 is a multitrick pony.

Setup
The most demanding speaker I used to audition the EICO was the mbl 116 Radialstrahler. I was amazed the EICO could drive the mbls—it clipped relatively fast, but it sure sounded wonderful. While mbls are very insensitive, they offer a relatively flat impedance modulus that minimizes frequency aberrations when used with poorly damped (higher output impedance) tube amplifiers. The 116 is also the least fatiguing and most revealing loudspeaker I've ever heard in my home, and is my current reference. Plus, it looks cool and is a great visual contrast to vintage gear. In addition to the 82dB-sensitivity mbls, I used two different pairs of Bozak Concert Grands and Classic Audio's 97dB-sensitivity Studio Standards— for more concert-like listening levels. This gave me a broad range of speakers and, most important, impedance loads to present to the HF-81. (The speaker/amp interface is more important than the individual speaker or amp.) Cables were provided by Crystal Cable, TARA Labs, Kimber Kable, Nordost, and Acoustic Research.

I placed my HF-81 on three Stillpoints vibration-control cones, on a 2"-thick maple butcher block which was tiptoed to the floor. I first heard the Stillpoints demonstrated at the 2005 Rocky Mountain Audio Fest, and was impressed with their patented ceramic-ball-and-Delrin-cup decoupling tech-

I'm now choosing among the 116, 111, and 101, to see which one will be my big "I made it through midlife crisis" audio purchase.

1 See www.stillpoints.us/1/Pages/about.html#Anchor for information and dealer locations.

and a much larger one at 20kHz, to 1.1 ohms and 2 ohms, respectively.

Usually, this high an output impedance will result in obvious response modifications when an amplifier's frequency response is measured into our simulated loudspeaker. However, as you can see from fig.1, which shows the behavior from the 4 ohm tap (the 8 ohm tap responses, not shown, are similar), these modifications are swamped by the amplifier's departure from a flat response, even when the Bass and Treble controls are set to their center positions. The entire midrange and bass regions are shelved up by 1–1.5dB; while the left channel's treble peaks by about 0.5dB, the right channel rolls off precipitously above 7kHz or so, with a –3dB point at 20kHz. Note the "lumpiness" in the response traces below 20Hz; the amplifier is only marginally stable at infrasonic frequencies, suffering from mild "motorboating" in this region.

Fig.2 shows the left channel's reproduction of a 1kHz squarewave. The upper-treble peaking seen in fig.1 sharpens the waveform's leading edges, but the bass plateau results in an uptilt of its top. The 10kHz squarewave (fig.3) is very much rounded off, due to the HF-81's early high-frequency rolloff. I am surprised that PB didn't hear this rolloff, but it is possible that as he set the tone controls by ear, he was compensating for this problem.

Part of why it was hard to set the tone controls to their nominally flat positions was the extreme amount of cut or boost they offer. This is shown in fig.4, which was taken at...
The Reference Room includes the Pass Labs X.5 Series 350.5 amplifier and the Avalon Sentinel loudspeakers. AVALON speakers designed by Neil Patel.

Just one of the ever-changing setups in the Evaluation Room. Shown here: VPI Scout turntable, Sutherland electronics, Cayin amps, Harbeth speakers and Noblesse Furniture.

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A look into a corner of the Reference Room, including one of the Avalon Sentinel loudspeakers and the VPI HR-X.

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nology, which dissipates energy as vibrations pass through the ball and cup, thus reducing bass boom. The cones promise a lighter, airier sound when used under source components, amplifiers, and loudspeakers. More sets are on the way; I'll test them under other components for efficacy and synergy. The effects of the Still-points on the EICO HF-81 weren't subtle; there were substantial improvements in clarity and detail retrieval. I'm no big tweak freak, so this is a major recommendation; check them out.

Sam Kim, EE, a master of audio restoration, Sam's Audio Labs.

Sound
Back in the 1960s, the EICO HF-81 was rated "excellent" by Saturday Review and "outstanding in quality and extremely versatile" by Hi-Fi Music at Home. Hirsch-Houck Labs, testing for High Fidelity, said it was a good value on its own merits, and a better one when price was considered.

First-time listeners will be taken aback by the inordinate amount of detail and frequency extension of this late-'50s design. To hear the punch and explosive impact of the HF-81, spin the overlooked Miles Davis masterpiece, A...
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From: tracy@email.com
Subject: dCS P8i
Date: June 8, 2005 4:54:56 PM EDT
To: danitgoodwinshighend.com

Dear Goodwin’s High End folks,

I may have made a big mistake today when I took the dCS P8i home to audition it. Truthfully, I was expecting (hoping?) that I would find that my relatively modest system would hold the dCS back and that I would not hear an appreciable difference between this player and the other player’s that I’ve tried. This, I thought, would show me that any incremental improvement in sound provided by the dCS could not justify the higher price. When I asked you the question – “Will I really hear what the dCS can do in my system?” – you politely deflected the question and simply said there was only one way to find out: “Take it home and see what you think.” Man, was I in for a surprise!

I have NEVER heard sound like this before in my system. Redbook CD? Spectacular! SACD? Unbelievable! The sound stage and imaging of this player are three-dimensional and lifelike, and like nothing I have experienced in my home before. From top to bottom, the dCS hits every note spot-on: tight, authoritative bass; smooth, liquid treble. There are REAL instruments in my room. And I don’t mean the easy ones like a guitar or piano. I am talking about the high-hats, cymbals, 4-string bass, oboes, trumpets, and did I mention cymbals. My toes are tapping, my jaw is agape, and I am just shaking my head.

It is far out of my budget, but there is just no turning back now... I will call on Tuesday and put in my order. Thanks to Paul for his good humor and for working with me through this process, and thanks to Dan for taking time with me today and letting me borrow this player. What a night I am having!

Cheers,
Tracy S.
Tribute to Jack Johnson (remastered CD, Columbia/Legacy CK 93599). These sessions, recorded between February 18 and June 4, 1970, were an organically moving and evolving trip of jazz legends: Steve Grossman on saxophone, John McLaughlin on guitar, Herbie Hancock on organ, Michael Henderson on bass, and Billy Cobham on drums. On the opening track, “Right Off,” McLaughlin’s guitar explodes into the left channel. The EICO perfectly captured this brutal transient attack with aplomb, and as fast and as sharp as any Spectral amp. When Miles enters in center stage with a short blast, the EICO placed his horn smack dab between my speakers and slightly to the rear, in a reach-out-and-touch-it space all its own.

The HF-81 fed it all back to me—I heard the synergy, felt the music—just the way a single-ended amp delivers. It was amazing—and to ice the cake, the HF-81 didn’t soften the bass or roll off the top. It was as if I’d taken a Krell, a Spectral, and an Ongaku amp, put them all in that transporter pod in The Fly, then thrown the switch and opened the second pod and, presto—the HF-81. The first day I heard one, I was up till the wee hours of the morning, losing my audio virginity.

The HF-81 excelled at capturing the space between the instruments. I’m not quite sure how to describe expertise in this, so I’ll let a recording speak for me. “Roses,” from Catie Curtis’ excellent A Crash Course in Roses (CD, Rykodisc RCD 10478), can bring tears to your eyes if your system is up to the task. The song tells the story of moving from Ireland to America, against beautiful background soundscapes and atmospheres. The HF-81 retrieved this detail on a par with my Komuro 212, a

\[ \text{measurements, continued} \]

...respectively, at 2.83V into loads ranging from 2 to 16 ohms. The distortion is acceptably low only in the midrange, and rises considerably in the bass and at high frequencies, though the HF THD is less severe when the load impedance is higher than the nominal value of the transformer tap. However, as the distortion is almost pure second harmonic (fig.9), it will have less of a deleterious subjective effect than you’d expect.

When I see a rise in distortion at low frequencies with a transformer-coupled amplifier, I usually suspect that the transformer’s core is starting to saturate, which will introduce odd-order components. However, the spectrum of the HF-81’s output while it drives a 50Hz tone into 8 ohms (fig.10) reveals that the second harmonic is still the highest in level, suggesting some output-stage asymmetry instead. Note that the 120Hz AC supply component in this graph lies at a moderately low −80dB. Increasing the signal frequency to 1kHz (fig.11) drops the levels of the harmonics considerably, though now some higher-order odd harmonics can be seen.

\[ \text{The HF-81’s poor HF linearity, seen in figs. 7 and 8, results in a very disappointing result on the high-frequen-} \]

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**VINTAGE AMPS ARE THOUGHT TO BE SOFT AND BLURRY. NOT THE HF-81.**

The little EICO could also capture delicacy and fragility within the size and scope of a large-scale performance—just like a high-powered amp. The *Hen*, from Respighi's *The Birds*, performed by Antal Dorati and the London Symphony Orchestra and recorded by Wilma Cozart and C. Robert Fine (CD, Mercury Living Presence 432 007-2), showcased the HF-81's ability to follow the melody as it dances from the strings to the flute to the oboe and back. Vintage amps are thought to be soft and blurry. Not the HF-81.

On Bob James' big-band masterpiece, *Grand Piano Canyon* (CD, Warner Bros. 26256-2), the HF-81 exploded with dynamic range equal to today's designs. James' piano was rendered perfectly—just like a high-powered amp.

The HF-81's output and filtering capacitors and all out-of-tolerance resistors, rebuilding the volume control, rewiring the undercarriage, and resoldering every connection. Sam Kim's restorations are not the drop-in-and-solder jobs I'm used to. I've replaced coupling and filter caps in many components but have never taken the time to rewire, resolder, and check out the circuit to determine which values of modern-day parts are the best choices. Sam Kim does.

I compared the restored unit to two other HF-81s, and Sam Kim's restoration was superior in detail retrieval, soundstaging, and low-frequency extension and speed. This was the unit I sent to John Atkinson for bench testing.

A second HF-81 from a prior restoration was sent to Sam's Audio Labs for identical work and consistency testing. This unit's coupling caps were replaced with designer-grade Auricaps provided by Audience.2 Auricaps are metalized polypropylene capacitors precision-wound in the US, and are considered by many to be the finest DC-application capacitors available.

Restoring audio equipment is an art form. Over the years, I've listened to many restorations but have yet to experience, see, or hear anything close to the work done by this humble man. I place Sam Kim in the company of the Audio Gods: Hiroyasu Kondo of Audio Note and Nobu Shishido of VVavac (both of whom are no longer with us), and Noriyasu Komuro of Komuro Audio Labs. Sam Kim is a master audio artist who has memorized more than 500 schematics. One of 20 men selected in the 1960s by the Korean Government for training in PhD-level electronics engineering, he was the top engineer in the Korean Radio Regulation Department of the Ministry of Communication. He now lives modestly in Montreal, where he performs restorations that capture the magic of music.

—Peter Breuninger

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1 For more information on Sam's Audio Labs restorations go to [http://samsaudiolabs.com](http://samsaudiolabs.com).
2 Auricaps are available from all major suppliers of electronic parts. See [www.audience-av.com](http://www.audience-av.com) for dealers and ordering information.

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**VINTAGE AMPS ARE THOUGHT TO BE SOFT AND BLURRY. NOT THE HF-81.**

**The EICO HF-81 was restored by Sam Kim at Sam's Audio Labs** in Montreal, Canada. The work done included replacing the output and filtering capacitors and all out-of-tolerance resistors, rebuilding the volume control, rewiring the undercarriage, and resoldering every connection.

Although some aspects of its measured performance were okay—the fairly low output impedances, the mainly second-harmonic nature of its distortion signature, the honest power rating—the EICO HF-81's poor low- and high-frequency linearity and the idiosyncratic nature of its tone controls leave me scratching my head about why so many audiophiles regard it as one of the best-sounding amplifiers of the "Golden Age."

—John Atkinson
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fectly against the bass line, with no smearing. Each instrument’s harmonics were intact, blending together to form the correct tone that gives the listener the illusion of real individual instruments playing live together in the room. The HF-81’s 14Wpc seemed more like 60Wpc—until it reached its clipping point, which was at about the same point as an 845 SET amp.

Conclusion
The EICO HF-81 performs best when mated to speakers that are easy or moderately easy to drive, and is readily available on eBay for $300–$800. Toss in a full restoration, and for well under $2000, the HF-81 can beat the pants off many amps and shame the SETs at their own game. I unconditionally recommend that you find an EICO HF-81, restore it, and hear for yourself what the fuss is all about.

ASSOCIATED EQUIPMENT

ANALOG SOURCES
Luxman PD-555 vacuum-holddown, Luxman PD-444 direct-drive turntables; Mayware Formula 4, Dynavector DV-505 tonearms; Koetsu Rosewood, Goldbug Mr. Brier, AudioQuest 7000, Technics 1520 cartridges; Cotter Verion step-up transformer; Otari MX 5050 4-channel, Ampex 44 open-reel tape decks.

DIGITAL SOURCES

PREAMPLIFICATION
Luxman SC50, Convergent Audio Technology Ultimate preamplifiers; Wright Sound WPP100C, Benz-Micro Series 2 Lukaschek PP-1 phono stages.

POWER AMPLIFIERS
Komuro Audio Reference Standard 212 SET; Wright Sound WPA 3.5, Mono 8s; Pioneer-M-22, Classé DR-2, DR-3s in bridged mode; Fisher 500c.

LOUDSPEAKERS
mb1 116; Bozak Concert Grand B-310 (biwired option), B-410; Bozak B-4000a Symphony; Classic Audio Studio Standard II.

CABLES
Crystal Cable, TARA Labs, Kimber KCAG, Nordost Red Dawn, Acoustic Research.

ACCESSORY
Walker Precision Motor Drive power conditioner.

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Talking to Mac Rebennack is a little like what I imagine talking to Lester Young must have been like. Both converse in their own hip, profane, utterly distinct lexicon—in Mac's case, growled out with a mixture of utter conviction and a bemused wink. A few examples: On recording Johnny Mercer's "Dream" for this record, the good doctor said he didn't want it to become a "regulation VFW hall geriatric squad dance." Describing the way he and his band made Mercenary, he said they "hit it and quit it." And when asked about the way the rest of the country is reating post-Katrina New Orleans, he said, in part (and, I'm betting, with disgust), "We don't even grade up to regulation third-world-country bullhit." My personal fave is when he calls children "sprouts."

Today, at 65, he and his music have also settled into their own sort of groove. Ask a longtime fan about a new Dr. John record, and the answer, inevitably, "It's a Mac record"—meaning he does what he does, it's not going to change, and it's reliably good to great.

In taking on the Johnny Mercer songbook, Mac has forced himself to soar only stretch, but to come to terms with an equally eccentric musical personality. The Southern-born Mercer, who died in 1976, remains one of the greatest American popular lyricists and songwriters. He scored such hits as "Moon River," and Mercen Falling into the record's easiest and most heartfelt lets-let's-jam-it-up funk vamp that I'm bettin' he can do in his sleep. Finally, there's "Save the Bones for Henry Jones," written by Vernon Lee and Mac's pal, the late, great New Orleans guitarist Danny Barker, and later tweaked and performed by Nat Cole. Mac, long since a hipster, has coaxed some of the material into something new and personal, as he said they "hit it and quit it once was, but that nevertheless fits perfectly with some of his phrasing. When he sings—in his funky, Meters-like take on "You Must Have Been a Beautiful Baby"—"You must have been a hip little chill," or uses a nasal tone that says get down as he draws out the word beautiful, about all you can do is smile and marvel.

On Mercenary, much of which he'll undoubtedly perform at Home Entertainment 2006, June 1-4, in Los Angeles, Mac saves the best for last. The album's only original tune, "I Ain't No Johnny Mercer," is the kind of let's-jam-it-up funk vamp that I'm bettin' he can do in his sleep. Finally, there's "Save the Bones for Henry Jones," written by Vernon Lee and Mac's pal, the late, great New Orleans guitarist Danny Barker, and later tweaked and performed by Nat Cole.

The trick with songbook records is to make your mark on material that's already too familiar—to bring new insight and inspiration to, say, "Moon River," which for many Americans has been a hipster's favorite words in this song. It makes for an experience that's dramatically different not only from Conniff and Williams, but also from 99.9% of all other performances of this tune you'll ever hear.

That pattern holds for the rest of Mercenary. The arrangements are carefully and radically different from anything you might have expected. This seems to mean that Mac put some serious time into thinking about this record. The virtues of spontaneity and nailing everything in one take aside, Mac has in the past sometimes tossed off his records too quickly. Here, though, he's sharp and on the case, which means that hearing "I'm an Old Cowhand," which you've heard a thousand times before, is a voyage of discovery. In general, the more well-known a tune is here, the more radical Mac's changes on it are. New Orleans rhythms dominate or at least tinge every performance. The great "Blues in the Night," which opens the record, is a model of how to defeat expectations and revive interest in a done-to-death song. "That Old Black Magic" is virtually unrecognizable and may be the single set of liberties taken too far.

Vocally, Mac makes do with a talky growl that's increasingly soulful but markedly less elastic and tuneful than it once was, but that nevertheless fits perfectly with some of his phrasing. When he sings—in his funky, Meters-like take on "You Must Have Been a Beautiful Baby"—"You must have been a hip little chill," or uses a nasal tone that says get down as he draws out the word beautiful, about all you can do is smile and marvel.

At a time when most of the greatest New Orleans musicians from the city's glorious musical past have died, and many of those left alive have now been driven away by the hurricane, Mac Rebennack's longevity has made him one of the last links to the golden age of Crescent City music. Few people can pound out a second-line rhythm the way Mac still can. In succeeding with a record of Johnny Mercer tunes, he also shows how connected he is to that great springs of American popular song, Tin Pan Alley. Proficiencies in show tunes and New Orleans funk is a singular combination. It's not hyperbole to say that the man has become a national musical treasure. Here's to hoping he always remains irascible and vivid—or, as he'd put it, "the real McGillicuddy."

—Robert Baird
BOCCHEIRINI

Guitar Quintet 4; Grande Quintettino in C, La Musica Notturna delle Strade di Madrid; Sinfonia in A; Sinfonia in D

Rolf Lislevand, guitar; Mansfred Kraemer, Pablo Valetti, violin; Bruno Cocset, cello; José de Udarte, castanets; Le Concert des Nations, Jordi Savall


Performance ****

Sonic ****

Bochnerini's superb musical taste and curiosity almost invariably lead him to Spain (Bach and Monteverdi notwithstanding). The Italian Luigi Boccherini first went to Spain in 1768 and found a creative home there; for several reasons, musical life had begun to thrive in Madrid and other cities, not only at court and with the aristocracy but among the "people" as well. After performing at Aranjuez and Valencia, Boccherini was appointed in 1770, by Royal Decree, a member of the household to the Infante. There he composed chamber works, a Stabat Mater, even a zarzuela.

This reading features four of the works he wrote between 1780 and 1790 and are a break from Savall's usual presentation of relative esoterica. In fact, the Guitar Quintet, with its Fandango final movement, which includes castanets, is as famous as any other piece of late-18th-century chamber music. Boccherini is sometimes seen as a rather prissy composer (he's been referred to as "Haydn's wife") because of how refined and graceful his music tends to be, but refinement and grace do not preclude vitality, bounce, and/or catchy tunes. At any rate, he composed more than 500 works for chamber arrangements and orchestra in the last 40 years of his century, and if not all of them are superb, the four recorded here certainly are.

Savall and the soloists of Le Concert des Nations play the heck out them. As for the Guitar Quintet, Savall leads a passionate, fun-loving reading that is "popular" in the best sense; all stodginess is gone, attacks are bright and fast, and Rolf Lislevand's guitar playing is clear and has all the energy of an excitabie street musician, with a rhythmic urgency that is even more highlighted by the castanets. The Grande Quintettino is a programmatic piece that reconstructs a night in Madrid. Boccherini plays games with its seven movements: in one the violin imitates a drum, another is played entirely in pizzicato to portray bells ringing the Ave Maria, and another sounds the retreat of soldiers. The five instruments are differently highlighted by Boccherini—and Savall—and the consistencies keep changing. It's an irresistible work brilliantly performed.

The Sinfonia in D Minor will remind listeners of Haydn. It features flute, bassoons, and horns, and the second movement gives each of these a moment in which to shine. It moves from major to minor modes frequently and keeps you on your toes; between moments of extraverted music-making come softer, spellbinding interludes. It's a turbulent work very much in the Sturm und Drang mode just then overtaking European music, and its upbeat finale, with strings swirling, is a wonderfully busy piece of composition. The Sinfonia in A Major comes across as the perfect combination of symphonic and chamber music, with contrasting sections of strings and winds and a great forward impetus, without ever becoming aggressive.

Boccherini's music is always full of charm; Jordi Savall, his musicians, and Alia Vox's engineers have turned these pieces into great listening experiences.

—Robert Levine

LONDON PHILHARMONIC ORCHESTRA

Rachmaninoff & Turnage

RACHMANINOFF: The Isle of the Dead, Symphonic Dances

Vladimir Jurowski, London Philharmonic Orchestra


Performance ****

Sonics ******

TURNAGE: Scherzoid, Evening Songs, When I Woke, Yet Another Set To

Vladimir Jurowski, London Philharmonic Orchestra

Gerald Finley, baritone; Christian Lindberg, trombone; Jonathan Nott, Rolf Lislevand, Marin Alsop, conductors; London Philharmonic Orchestra


Performance ****

Sonics ******

If the London Symphony Orchestra's LSO Live is the Hertz of British self-produced orchestral labels—it was the first, and so far has won the most Grammys—the London Philharmonic Orchestra's label is the one that tries harder. While LSO Live has three elder-statesmen conductors—Colin Davis, Bernard Haitink, Mstislav Rostropovich—making one more pass at the core symphonic repertoire, the LPO's first set of releases has five, both living and dead: Kurt Masur, Paavo Berglund, Klaus Tennstedt, Thomas Beecham, and Haitink. Also, three of the hottest younger conductors around—Vladimir Jurowski, Jonathan Nott, and Marin Alsop—are represented on a single LPO release of new works by one of England's most fascinating composers, Mark-Anthony Turnage. All of the newer recordings are SACD (which knocks out Haitink, Beecham, and Tennstedt). And unlike LSO Live, the technology isn't asked to counteract the flat, dry recording acoustic, but has for a starting point the reasonably rich, detailed sound of Royal Festival Hall, where most LPO recordings are taped.

The catch is that, in contrast to the mid-priced LSO Live, LPO discs are full price. Still, the LPO discs mostly justify their cost, some more than others. Haitink's disc of English orchestral music (LPO 0002), from 1984 and '86, fills in holes in his Elgar discography with a just-above-average Enigma Variations, but has the best-ever recording of Britten's Our Hunting Fathers, with soprano Heather Harper. While there's little doubt that Berglund knows his way around Sibelius better than almost anyone, his live 2003 and 2005 readings of Symphonies 2 and 7 (LP 0005) have an energy his more complaisant studio recordings do not, though not all that much more. Masur's tightly
round readings of Shostakovich's Symphonies 1 and 5 (LP 004), from 2003 and 2004, are typical of him, intelligent allowing the works' structures and mechanics to reveal their content, sometimes at the expense of engaging sur-
face details.

The two present releases—a collection of four recent, reviously unrecorded works by Turnage, and Jurowski's Rachmaninoff disc—are serious additions to the recording catalogue. In the collaborative art of conducting, charisma is hard to define—but the rising, underrecorded Jurowski as it. The primary evidence on the Rachmaninoff disc is a inner animation that suggests that the LPO players are not so much playing the music as singing it from the 

depths of their souls. The musical events of The Isle of the Lead, an early-ish symphonic poem, unfold with a weight tat, more than in most performances, impresses on the stener a sense that the work is about important if haunt-
d matters. In Jurowski's extraordinarily lithe, lean reading of the Symphonic Dances, that singing quality is heard gain in the way he leans into a melody making its first ntrance, and throws in a perfectly timed nanosecondause just before it peaks. Meanwhile, he gives the accompanying rhythm a flexibility that supports what he's ying to say with the melody. Some may take exception o Jurowski's great ritard in the second-movement waltz, ut it's part of a climax so skillfully built that you'll hear o complaints from me. Conductors often enjoy throwing heir weight around with Rachmaninoff; Jurowski, never brute, so trusts the composer's notes and his own phras-
ings that excessive sound would only get in the way.

The works of Mark-Anthony Turnage aren't known for being easily accessible on first hearing, and these performances include occasionally labored moments. However, there's nothing painful in these incredibly rich, eventful, multilayered scores, and I've returned to them many times in the past month. I constantly go back and forth about what the music is saying and how successful each work is, and happily have not come up with a consensus overall impression. It's great to be able to have this kind of dynamic, ongoing relationship with a disc of contemporary orchestral music.

Scherzoid gamely exploits the age-old tension between jazz and conventional rhythms, though its initial inspira-
tion came from the scherzo of Beethoven's Symphony 9. Despite the implications of the title, the triptych of nocturnal dream pieces comprising Evening Songs has no vocal component, but incredibly subtle orchestral scoring that renders a series of ominously amorphous and wonderfully poetic sound collages. When I Woke, however, is a cycle of songs, these set to texts by Dylan Thomas, that oddly seek a lower-key lyricism as an alternative to the poet's own high-rhetoric readings. The great marvel of the final piece, the often raucous Yet Another Set To, is its second movement, A Soothing Interlude, in which a muted trom-
bone plays Turnage's atonal version of cool jazz.

—David Patrick Stearns
**THE DOLLS**

The Dolls

Performance ****
Sonic ****

What would happen if you fused the tender yet distant, organic-electronic sonic patchwork of Herbert’s Bodily Functions and the post-rock/jazz-fusion exploits of later-period Talk Talk with the serene and cinematic compositions of Craig Armstrong and the hypnotic, experimental electronic pulses of Finland’s Luomo? You’d get The Dolls.

The Dolls is the finely crafted “super-group” alter ego of electronic composer-producer-remixer Vladislav Delay (aka Luomo), award-winning melancholic Scots composer Craig Armstrong (Massive Attack, Madonna, U2, the Moulin Rouge soundtrack), and German vocalist and electronic composer Antye Greie. Released on Delay’s own Huume Recordings label, the trio’s self-titled debut is an arty and opaque postmodern exercise charting a range of eclectic influences from deconstructed electronic, soulful tech-house, dub, Talk Talk, Bark Psychosis, classic ECM, Can, Dali, Dada, and Fluxus. It’s a neatly wrapped Orwellian vision summoning Poe, Camus, Woolf and Chomsky in one gloriously refined musical statement.

A perfect companion for cold winter nights, The Dolls is draped in warm, minimal electronic textures and muted beats from Delay, Armstrong’s heavily treated piano compositions, and chanteuse Greie’s hauntingly hushed vocals. She breathes life into each song, concocting a netherworld littered with vivid, seductive narratives that recall Björk. Highlights include the poetic “Martini Never Dries”; the sumptuous title track; the classic “Night Active,” inspired by early-’80s New York mutant disco and no wave (it screams for an extended mix); the languid and hypnotic “Collect the Blue,” with its luscious refrain of “the water seems more blue than all the skies”; the stargazing meditation “Star-Like”; and the bright “Kukkuu.” The Dolls create an irresistibly taut soundscape that conveys a sublime sense of urgency and longing, as well as an underpinning tension between introspection, self-indulgence, emotional excess, and restraint.

— Craig Roseberry
MUDHONEY
Under a Billion Suns
Performance ****
Sonics ***

Stereophile Math: If you never dug the so-called “Seattle sound” and take pride in basking in the pristine sounds emitted by your high-end audio, subtract two stars from the Sonics rating above. If you’ve been patiently waiting for grunge to make a comeback, and even occasionally spin records on your battered old drop-down Magnavox changer, add five stars. Because Under a Billion Suns, Mudhoney’s sixth album (not counting compilations), gushes forth on a bilious—some might say a gorgeous—wall of sludge.

After being dropped by Reprise in 1998, in the wake of the commercial flop of Tomorrow Hit Today (longtime bassist Matt Lukin quit too), Mudhoney was presumed down and out. But they retreated, licked their wounds, and came back with one of the strongest, strangest albums of their career, 2002’s overtly psychedelic Since We’ve Become Translucent. Now, rather than revisiting that record’s cosmic terrain, Mudhoney 2006 sounds remarkably like the Mudhoney of the late ’80s—at times as hotwired and agitated as teens who’ve just discovered punk rock, and at others sluiced-up and punch-drunk, reeling from the realities of a dead-end existence. In key tunes such as the doomy, Black Sabbathy (with horns!) “Where Is the Future,” the teeth-gritting, Stooges-like “A Brief Celebration of Indifference,” and the careening thumper “On the Move,” one hears distinctive echoes of the group’s vaunted past role as torchbearers of grunge. Even the song titles carry overtones of premillennial hard-rock nihilism.

It’s a strictly musical façade, of course; guitarist Steve Turner, vocalist Mark Arm, drummer Dan Peters, and replacement bassist Guy Maddison are older and wiser than most, and might be considered the grand old men of the Seattle scene—hardly whippersnappers or slackers. And they can still jet into space at will; check the Hawkwind-esque whoosh and Hendrixian whammy of “In Search Of,” a droning red nebula of sound spiked by Turner’s and Arm’s twin spirals of lysergic guitar. Still, if Under a Billion Suns isn’t exactly a love letter to flannel shirts and Doc Martens, it does sound as if Mudhoney decided to throw themselves a 20th-anniversary party a few years early. To paraphrase one of the band’s early songs, watch out baby, ’cos here comes sickness.

—Fred Mills

MATTHEW SWEET & SUSANNA HOFFS
Under the Covers, Vol. 1
Performance ****
Sonics ****

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Matthew Sweet and Susanna Hoffs possess prime pop pedigrees. Sweet is responsible for, among many other albums, the masterful Girlfriend (1991), while Hoffs handled much of the songwriting for the Bangles, who inarguably had some high points of their own. But we havent heard much from either of these artists over the last few years that has measured up to their best work. With Under the Covers, Vol. 1, that drought ends in a downpour. The concept—the duo performs covers of their fave 1960s pop songs—looks good on paper, and the reality is even better. Sweet and Hoffs, known casually here as “Sid n Susie,” have had ample experience covering other people’s songs. Hoffs, most famously, took a legitimate crack at Simon and Garfunkeks “Hazy Shade of Winter.” Together, they parlay their experience and their generous musicality into one of the best covers albums of the last decade, and inject temporary life into that great and glorious subset of rock’n’roll, power pop.

The song choices support the strengths of both artists. Each sings beautifully, and their lush vocal harmonies, Sweet’s reedy pipes underlying Hoff’s little-girl loveliness, are a real highlight. On lead, Hoffs steps in for Linda Ronstadt (“Different Drum”), the Zombies (“Care of Cell #44), and Sandy Denny (“Who Knows Where the Time Goes?”). Sweet has a ball with Brian Wilson (“The Warmth of the Sun”), Neil Young (“Cinnamon Girl”), and Bob Dylan (“It’s All Over Now, Baby Blue”). They tackle lead together on “Monday, Monday” and, most notably, “Alone Again Or,” Love’s brilliant song from 1967’s Forever Changes. Only on the Who’s “The Kids Are Alright” and the Velvet Underground’s “Sunday Morning,” both rather predictable takes, do they fail to find a way to stand out from the originals.

Everywhere else, though, the instrumental textures are crisp and the production is clean and vocal-dominant, with a vintage/analog feel. In the end, it’s Sweet’s and Hoff’s intermingled voices that grab and hold the listener. The fusion is magical, and creates anticipation for Vol. 2, which we can only hope will dig up buried treasure from the ’70s.

—Bob Gulla

RICHARD THOMPSON

RT: The Life and Music of Richard Thompson


Performance ******

Sonics ******

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Due to its prodigious size and consistently high quality, Richard Thompson's four-decade body of recorded work doesn't easily lend itself to anthologization. Unlike virtually every other artist of his age and stature, the prolific English singer-songwriter-guitarist has never made a record that isn't worth hearing. Even his lesser work routinely maintains levels of musical invention and emotional authority that leave most of his contemporaries in the dust. Thus, at this point, the prospect of an authoritative, career-spanning Thompson box seems unlikely; 1993's three-CD Watching the Dark was a respectable effort that barely scratched the surface of his catalogue.

Probably our best hope for an authoritative, big-ticket Thompson package is RT: The Life and Music of Richard Thompson, lovingly assembled by the English folk-rock reissue label Free Reed, which has already done an impressive job with similar releases honoring Thompson's former band, Fairport Convention, and his Fairport bandmates Sandy Denny, Ashley Hutchings, and Dave Swarbrick. The five-CD, 85-track set consists entirely of previously unreleased performances, and dispenses with chronology and historical context. The seeming randomness of the track sequence is actually an asset, allowing the listener to bypass the archivist impulse and dive headlong into the music's raging, haunted heart. The resulting listening experience carries the same rapturous sense of discovery of a first-rate bootleg or a savvy fan's mix tape. It's hard to imagine a more persuasive one-stop testament to the depth and breadth of Thompson's talents.

Discs 1-3 gather a sterling selection of mostly live performances, generally from the 1980s and '90s, that offer a compelling sampling of Thompson's eloquent songbook and disproportionately emphasize his sublime acoustic work over his fiery electric output. The performances are never less than gripping and are often positively revelatory, encompassing vivid existential miniatures ("Down Where the Drunkards Roll," "Dimming of the Day"), turbulent inner firestorms ("Calvary Cross," "Shoot Out the Lights"), heart-tugging vignettes ("Beeswing," "From Galway to Graceland"), and playfully mordant humor ("Now That I Am Dead," "Madonna's Wedding").

Disc 4 celebrates an element of Thompson's persona that's long been a feature of his concerts but is largely unrepresented on record; it's his work as a sharp interpreter of obscure novelty tunes and other composers' songs. In addition to showcasing his lighter side on material by The Who, Squeeze, Plastic Bertrand, and Britney Spears, these numbers highlight Thompson's oft-overlooked skills as an ingratiating entertainer and witty raconteur. Disc 4 also contains memorable collaborations with British folk icon Norma Waterson and rising chanteuse Judith Owen.

The real treasure for Thompson fanatics is disc 5: performances of 15 previously unreleased Thompson compositions stretching as far back as the early '70s, including a winsome quartet of tunes recorded with former musical and marital partner Linda Thompson. While many of these rarities are lighthearted amusements rather than major discoveries, such standouts as "Mrs. Rita" and "Bad News Is All the Wind Can Carry" demonstrate how Thompson's castoffs far outclass most artists' keepers. As if this embarrassment of musical riches weren't enough, the packaging is just as classy. Included is an instructive 172-page book with extensive and informative annotation and a massive assortment of vintage photos and memorabilia. But even without these welcome frills, RT would be an indispensable addition to any serious Richard Thompson library.

—Scott Schinder

**RED GARLAND TRIO**

**At The Prelude**

Long ago, misinformed hipsters used to say that Miles Davis wanted pianist Red Garland in his band because, as a former professional boxer, Garland was a good man to have around. In fact, Garland was perfect for Davis' "First Great Quintet" because his light yet locked-in swing and bright finesse made meaningful contrasts with Davis' edginess and John Coltrane's urgency.

Garland left Davis in 1958, and enjoyed a modest following for a few years as the leader of his own trio, recording extensively for Prestige. At The Prelude, recorded at a long-forgotten piano bar in Harlem on October 2, 1959, was the Prestige label's first live session, and one of the first remote recordings by engineer Rudy Van Gelder. Its original release was piecemeal, spread over four LPs. Here it is finally complete: the entire evening, three sets in performance order, with four previously unissued tracks, including a false start on "Li'l Darlin'.”

The mix is odd, with all the piano in the left channel, but the sound is reasonably alive for 1959. The ambience is smoky, a little boozy. The noisy crowd sounds happy, and why not? They're in the presence of a master of high style who was indebted to Ahmad Jamal but whose elegant, proportional block chords and tingly right-hand runs and clear, liquid touch exuded pure charm. Garland's symmetrical formal concepts for these songs all sound like paradigms, whether jazz standards ("Satin Doll," "One O’clock Jump"), rare jewels from far and near history ("Marie," "We Kiss in a Shadow," "M-Squad Theme"), or his own impromptu, natural, instinctive blues.

These three sets comprise a piano recital of a type that has disappeared from the modern world, by an artist centered and grounded in his milieu and confident of his identity—and hip enough to play with Miles Davis.

—Thomas Conrad
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Halcyonics Micro 40

Editor:
On behalf of Halcyonics and NABS, I would like to thank Mr. Fremer for his very positive review of the Halcyonics Micro 40 active isolation platform. We are sorry Mr. Fremer could not examine the Halcyonics PC software that comes bundled with the Micro 40 platform, as it enables users in their homes to observe a virtual oscilloscope revealing existing vibrations and the active cancellation of those vibrations through the platform. While we may be able to "port" the software to a Mac environment in the future, this will not be available anytime soon. Despite this, the ability to monitor vibrations through an active system as a tool that had not existed until now. We employ the use of "feet," nonresonant enclosures, platforms, and a wide array of devices to minimize the harmful effects of vibrations. Unfortunately, since these tools are passive in nature, with no active feedback, we must rely on guesswork and trial and error to manage their "tuning."

While the cost of the Micro 40 platform is higher than we would like, there is an enormous amount of laboratory-grade technology embedded in the platforms. We are pleased that Mr. Fremer experienced a "dramatic change in the forms.

Rega Apollo

Editor:
Thanks to Art Dudley for his review of the Apollo Rega Research Ltd., as readers are aware, pride themselves on making the most musical products, so it was especially gratifying to see a review focus so much on the music rather than technicalities.

The Apollo is a breakthrough product; our retailers compare it to much more expensive players on their shelves, and combine it with amps and speakers that normally you would not think a $1000 player could front. With so much production being shifted to the Far East, we are also pleased that this new CD player and the software package it contains hail from and are made in England.

Moscode 401HR

Editor:
Moscode has had a fantastic year, since we introduced the 401HR last May at the Home Entertainment 2005 show. We've received wonderful reviews and many e-mails and letters from loyal fans who are listening to music on Moscode products.

Wow, it's overwhelming! We would sincerely like to thank Wes Phillips, John Atkinson, and Stereophile for reviewing the 401HR in such glowing terms.

We believe that the hi-fi hobby should be about two things: achieving the best sound possible and having fun. The amp is "plug'n'play" so you can quickly fall deeply in love with your favorite music all over again, while those so inclined can enjoy a little "tube rolling." The stock 6H30Pi tubes we supply have their "opinion," and you can easily drop the faceplate and change that by changing the tubes. A pair of 6DJ8s will provide a subtle change in attitude. We've tried different tube combinations and settled on a few we like.

Wes's evaluation of the Moscode 401HR perfectly revealed our design

Acrolink 25, 6N-NCT 15A, 6N-NCT 30A

Editor:
Acro Japan and The Lotus Group wish to thank Michael Fremer for his review of the Acrolink 25 Amp Isolation Transformer and for his mention of our 6N-NCT 15A and 6N-NCT 30A standard models. The 6N-NCT 30A is 19" wide by 8.5" tall by 16" deep and weighs approximately 132 lbs. The only internal devices are the transformers themselves, wound with 99.99997% pure copper wire over rolled silicon-steel cores, and the six-nines-pure copper wires that connect them to the inputs and outputs. A properly built isolation transformer transfers nearly 100% of the energy from the primary to the secondary windings, but leaves behind nearly 100% of the noise. This level of efficiency cannot be achieved with conditioners that employ small devices and complex circuits. We encourage serious aficionados to explore the differences.

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While the 20th-anniversary edition of South By Southwest was in Austin, Texas, the subject of many conversations there was New Orleans. Many of that devastated city’s musicians have landed in Austin, which, like NOLA, advertises itself as the “Live Music Capital of the World.” Many of those wanderers, along with displaced performers from Lafayette, Louisiana, and other locales, were featured in showcases sprinkled throughout SXSW XX. None, however, was more rowdy or heartfelt than the Friday-night showcase at the venerable and venerated Continental Club, a venue renowned for having the nastiest restrooms this side of CBGB’s.

Accompanied by esteemed Stereophile writer and indie-rock geek extraordinaire Fred Mills, I walked into the Continental just as Mardi Gras Indians, the Flaming Arrows, in purple-and-gold outfits and headaddresses, paraded in and loudly set up shop directly in front of Continental just as Mardi Gras Indians, the Flaming Arrows, in purple- and- gold outfits and headaddresses, paraded in and loudly set up shop directly in front of Continental. Many acts followed, including former Elvis drummer DJ Fontana, who ran through all of Presley’s Sun records hits with Austinite and former Dylan guitarist Charlie Sexton, swamp-pop legend Warren Storm, and Li’l Band of Gold’s C.C. Adcock handling vocals. There were also sets by soul singer Barbara Lynn, rockabilly wildman (make that WILD! MAN!) Roy Head, and the great Archie Bell, of “Tighten Up” fame. The constant theme of these gigs was that New Orleans music cannot be allowed to die, and that the only way to prevent that is to rebuild the city.

So lemme get this straight: we’re spending millions everyday on the worsening Iraqi adventure and an American city—one that may be more corrupt than most, but is also infinitely more essential to this country’s cultural history than most—is being nickel and dimed? I’m talking about the town that produced Buddy Bolden, Louis Armstrong, Roy Brown, Professor Longhair, Dr. John, The Meters, Randy Newman, the Marsalis family, and many others. The most vivid symbol of how far down on the national agenda New Orleans has fallen are the thousands of bodies still unclaimed at the New Orleans morgue. At one Saturday-night SXSW gig, Susan Cowsill, originally of the 1960s singing group and more recently of the Continental Drifters, held a wake of sorts for her brother, Barry, who disappeared during Katrina and whose body wasn’t found until months later.

In all discussions of NOLA, one theme remains constant: Without a continuing infusion of cash and will power from the feds to rebuild the city’s infrastructure, the New Orleans that music fans once knew is history. In its place, in the Vieux Carré and other surviving districts, will be a shrunken, sanitized, Disneyfied Times Square on the mighty Mississippi. In other words, a fate worse than complete obliteration.

Every March, Austin becomes music-biz shorthand for SXSW, which can be stylistically divided into two distinct musical camps. On one side are the roots-music acts and American indie bands, best exemplified by a party held by Pop Culture Press that featured, among others, ex-db’s Peter Holsapple and Chris Stamey, Translator, Peter Case, Steve Wynn and the Miracle Three, Susanna Hoffs and Matthew Sweet (see review on page 167), and Willie Nile. Super fan Beatle Bob, the obsessed and irrepressible St. Louis native who has become a fixture at rock shows nationwide, really turned up his boogie mojo down front during this show. Other acts in these categories worth noting, about which I saw or heard much cicada-like buzz among critics, included Spank Rock, Catfish Haven, Silversun Pickups, Wolfmother, Gingerbread Patriots, Al Anderson, and Swedish-Argentinean Jose Gonzalez.

The other camp at SXSW is British bands. In 2006 more than in any other year—and this was my 18th SXSW—the annual UK invasion turned into a torrent. Every elevator was full of shaggy white rock dudes marveling about the weather and the conversion rate, speaking in interrogatory sentences, and using exotic profanity. The height of this year’s Anglophilia was a Friday-night performance by the Arctic Monkeys. I was already a fan and needed no convincing, but Stereophile music contributor and all-around sweetheart John Swenson was pleasantly surprised: “Unlike a lot of these British bands, they have a real personality.” (See my review in the May 2006 Stereophile.)

Finally, there was a subset of the roots/American-indie category that only battle-scarred SXSW vets can truly appreciate: Austin Bands of Days Gone By. On Saturday night, avant-pop band Glass Eye played a sparkling show to celebrate the release of Every Woman’s Fantasy, the swan-song album they recorded 13 years ago but that, because of a tangle with a record label, was never released.

Finally, this being Texas, there was a blues show—a non-SXSW event held at the South Austin Speed Shop, a vintage-car garage owned by guitarist Jimmie Vaughan, the older brother of Stevie Ray. Up on a makeshift stage, among gleaming cars from the 1930s and ’40s, were guitarists Denny Freeman (who replaced Charlie Sexton in Dylan’s band) and Derek O’Brien, former T-Birds bassist Preston Hubbard, and a kid drummer whose name I didn’t catch. They’d all come together, probably gratis, to back a set by the one and only Lou Ann Barton.

It was the best thing I saw at SXSW 2006. After the short set, which reprised most of the tunes on Barton’s 1989 album, Read My Lips, the audience was left open-mouthed, smiling, and shaking its collective head. Few human beings of any gender, age, or color have ever brought as much immediacy and emotion and impossibly lowdown dirty tones to singing the blues as Barton does, seemingly without even trying. Despite their enormous talent and soul, most of the younger acts—really most of the younger acts—really had trouble with the material. It all seemed so familiar. But Lou Ann Barton owned it. There’s nowhere like Austin at SXSW time.
There isn’t a marketer alive who, when asked what they most desire, won’t tell you: a simple message. Give us the word, the catchphrase, the slogan that will cut through the clutter and anxiety of the marketplace and hook the consumer with the thing, the simple elegant thing, that sets our product apart from the rabble.

We’ve noticed a lot of that going on lately in the loudspeaker industry. And a lot of it seems to be focused on tweeters—more precisely, tweeters made of exotic and expensive materials—like diamond.

Now there probably aren’t any (successful) loudspeaker designers alive so arrogantly self-secure in their technology who, when the competition announces something new and improved, won’t at least think to themselves: Hmmm. Is this something I need to know about?

There are at least two reasons for having that thought. The first has to do with the endless desire to make a better product. The second—less noble—motive has to do with wanting to be securely on the latest bandwagon.

At Wilson Audio, it’s safe to say that joining bandwagons has never been part of our corporate culture; a fanatic desire to make better loudspeakers always has.

June 1st, Wilson will introduce the WATT Puppy System 8. When it came time to design this new product, we wanted to be sure that every component of its design represented the best available technology. So we tested a lot of tweeters. The new materials promise (and deliver) extremely wide and linear bandwidth.

What they don’t do is achieve the remarkable lack of grain and distortion that characterize the latest generation of Wilson tweeters. In the end, cost was not the issue. Good marketing copy was not the issue. The WATT Puppy System 8 will have the tweeter from the MAXX 2. Because it’s the one that sounded best.

But we’re not going to claim that’s the reason you should rush out to hear the WATT/Puppy 8. A loudspeaker is a complex electro-acoustic system that depends on synergy between many elements to succeed. Good loudspeaker design demands a special brand of holistic thought. To say that our new speaker is worthy of your attention because it boasts this or that tweeter would be, at the very least, a half-truth. And that’s the whole truth.
"I'm not sure you can escape from an audition without buying. You have been warned."
Sam Tellig, Stereophile, November 2005

New Electra 1000 Be line

A tweeter's mechanical behavior is the key to palpable musical renderings. Today, the best tweeter is not the one that extends the highest, but the one whose range simultaneously extends the lowest. Knowing midrange reproduction is particularly critical to the human ear, we built a new, pure Beryllium ML inverted dome tweeter capable of reaching deeper into the mid-range than ever before. Its ultra-rigid and exceptionally light (21mg) membrane is capable of incredible acceleration and retrieval of detail, from 2kHz to 40kHz. The result is utterly disarming in it's musicality and accuracy, full of richness, yet without any directionality or distortion. Discover the new Electra 1000 Be at your nearest Focal retailer, or visit us at www.focal-fr.com.