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Next month: “Recommended Components.” 'Nuff said. Now for some errata:
When I grumbled last month that no US hardware manufacturers had become DCC licensees (p.55), I didn’t see the name of Radio Shack. Radio Shack is, of course, as American as the Yellow Rose of Texas, and will be manufacturing DCC recorders and blank DCC tapes. Also, we listed the wrong area code for LP Labs in RH’s review of their Well-Tempered Arm modification. The correct phone number is (510) 799-3858. In the January 1992 issue there were several errors in Richard Schneider’s “Building a Library” feature on The Chicago Symphony Orchestra 12-CD set, The First 100 Years. The contents sidebar on p.233 wrongly attributes the performance of Scriabin’s Poem of Ecstasy and Ran’s Concerto for Orchestra, which were actually conducted by Daniel Barenboim, to Carlo Maria Giulini. Conversely, Giulini’s sole contribution to the set, Brahms’s Piano Concerto 2 with Barenboim as soloist, is not listed. There’s also an error in the text on the same page, second column, second paragraph, second sentence: “De-clicking seems self-deceptive…” should read “De-clicking seems self-descriptive…” This does give the passage quite a different meaning, especially since RS tells us that de-clicking was the only func-
(continued on p.239)
FEATURES

IT WAS 30 YEARS AGO TODAY
To celebrate Stereophile's 30th year of telling it how it sounds, we reprint an "As We See It" article by J. Gordon Holt from Vol.1 No.3, originally published in early 1963.

72 MAGICAL MOMENTS
Record producer Jeff Weber, responsible for a new Sheffield Lab release, The Usual Suspects, talks with Robert Harley about capturing the energy of a live performance live to two-track.

IN THE CITY BY THE BAY, THE HARD DOMES THEY DID BRAY
Corey Greenberg reports from A&S Speakers' 3rd annual amateur loudspeaker sound-off, while John Atkinson tests the winners.

Judging the Sound-Off (p.156): Keith Johnson occupies the hot seat in the front, with Ken Kantor (left) and Corey Greenberg behind him. Sitting behind them are Reference Recordings' Jan Mancuso (left) and Speaker Builder's Dr. Bruce Edgar (right).

163 RACHMANINOFF'S PIANO PRELUDES ON RECORD
Barbara Jahn listens to the eight recordings of the 24 Preludes, including the composer's own of the infamous C-sharp minor work.

EQUIPMENT REPORTS

CODA TECHNOLOGIES FET-01 PREAMPLIFIER (ROBERT DEUTSCH)
NELSON-REED 804-CM LOUDSPEAKER (J. GORDON HOLT)
KINERGETICS SW-800 SUBWOOFER SYSTEM (JACK ENGLISH)
KISEKI BLUE GOLDSWORT MC PHOTO CARTRIDGE (DICK OLSHER)
KINERGETICS KCD-55 ULTRA D/A PROCESSOR (ROBERT HARLEY)
ROTEL RCD-955AX CD PLAYER (COREY GREENBERG)
ROTEL RCD-965BX CD PLAYER (COREY GREENBERG)
PANASONIC PRISM LX-1000 CD/LV COMBIPLAYER (THOMAS J. NORTON)
PIONEER ELITE SP-91D DSP SURROUND- Sound PROCESSOR (BILL SOMMERWERCK)
Robert Harley examines why there should be so much conflict between those who believe what they hear and those who would rather not listen.

Topics this month: Audio McCarthyism, the Allison Effect, music vs hi-fi, and the digital tape tax.

High-end news from the US, UK, and Japan, with the results of listening tests on a CD-R recordable CD machine, a revised timetable for the launch of Philips's DCC, veteran rocker Neil Young attacking digital, and a report from the 1991 Tokyo Audio Fair.

Barbara Jahn recommends recordings of Rachmaninoff's Preludes for piano.

Four new Barber CDs, live Beethoven & Shostakovich from Solti, Oppitz plays Brahms's complete works for piano, new recordings of Saint-Saëns's Samson et Delila and Wagner's Siegfried, three more Chesky jazz releases, and new albums from John Lee Hooker, Buddy Guy, Ice-T, Rain Tree Crow, and Squeeze. And, as always, more.

Stereophile's Publisher Larry Archibald says his say.

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As We See It

Robert Harley looks through a glass clearly

"Experience which is not valued is not experienced. . . .
Value is at the very front of the empirical procession."
—Robert M. Pirsig, Lila

Of my many childhood memories of the Los Angeles Museum of Science and Industry, one particular exhibit sticks in my mind: a rectangular glass case about 4' long with many brightly colored geometric shapes suspended inside. The case is oriented so that the visitor approaches it from the side, wondering about the significance of this apparently random and meaningless jumble of colors and shapes.

Upon closer examination, the visitor sees an eyepiece at one end of the glass case. Looking through it, the incoherent collection of objects is revealed to form a complex and perfectly ordered pattern. The instant the display is seen from any angle except through the eyepiece, the coherence and meaning vanish.

I see a powerful metaphor in that exhibit for the way we experience music and judge reproduced audio quality. Just as one's perspective in viewing the geometric objects determines their meaning (or lack of it), one's perspective in music listening has a profound influence on the experience, especially in assigning musical significance to sonic differences between components. Point of view is everything.

This idea ties together several apparently disconnected views of audio and my recent experiences in auditioning components. One of these ideas was raised by John Atkinson in the introduction to his loudspeaker reviews in the January 1992 Stereophile, and expounded
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on in his February "As We See It." He made the point that, although we hear from loudspeakers distinct images in three-dimensional space, the two-dimensional audioband signals driving the loudspeakers contain no such images. The impression of acoustic objects hanging in space before us is purely a creation of the mind. JA asserted, therefore, that the nature of what a component does wrong is of greater subjective importance than the level of what it does wrong: "A large measurable difference may be inconsequential if it doesn't change the perception of [the] acoustic model."

The second idea is what Meridian's Bob Stuart calls "the increasing importance of the smaller difference." In my interview with him in last September's Stereophile, Bob related how on a particular CD, what sounded like a single guitar in the back of the soundstage was revealed by successive digital converter refinements to be first two guitars, then a guitar and a mandolin. The objective changes in the signal were quite small, but the subjective difference—a single guitar becomes a guitar and a totally different instrument—was huge.

I had a related experience listening to familiar music through the Mark Levinson No.30 Reference Digital Processor. The No. 30's extraordinary resolving power, transparency, and dynamics produced a very different perception of the music. For example, the No.30's increased dynamic contrast and ability to present the steep leading edge of transients made drums more prominent and powerful. The result was a markedly different musical experience: the music had much more drive and rhythmic intensity, seemingly propelled by the drummer's energy. The entire band suddenly locked in rhythmically, with a greater sense of life and vitality when compared to other D/A converters. It's difficult to overstate the increased involvement in the music and the heightened sense of exhilaration.

The objective change in the signal that made the drums more prominent and life-like must be minuscule, but the musical significance of that change was profound. Why? And how is the museum exhibit a metaphor for this experience?

In the museum display, the shapes and colors convey meaning only when viewed from a specific vantage point. Massively re-arranging the shapes or substituting colors would result in no significant change when seen from the side—the shapes and colors have no meaning before or after the rearrangement. But when viewed through the eye-piece, the pattern and coherence are destroyed by a tiny change in even a single shape's position. Similarly, small objective differences in a musical signal have a large subjective significance, but only when experienced from a particular perspective.

**The Greater the Change in the Value of the Musical Experience, the Greater the Perceived Magnitude of That Difference.**

This perspective is an individual's sensitivity to sonic differences and how much that difference matters to him or her musically. The degrees of perception of a difference, and the ascribed importance of that difference, result partially from listening skill, but primarily from how the listener's feeling about the music changes. The greater the change in the value of the musical experience, the greater the perceived magnitude of that difference. The change has to have value to the listener to be perceived.

There is an argument that suggests that "subtle" refinements in audio reproduction are meaningless. It goes something like this: "Who cares about differences in cables, or even in amplifiers and D/A converters? Moving the loudspeakers 2" will produce far greater measurable differences in the sound." This sentiment was expressed to me recently by the editor of another magazine. He remarked that the same scale is used in describing differences between loudspeakers and amplifiers when, in his view, loudspeaker differences should be measured in miles, amplifier differences with a micrometer.

My thesis rejects this argument. First, no matter how the sound of a loudspeaker changes when it is moved in a room, its sound remains its own; it is not metamorphosed into that of a different model. More important, however, is that the kind of difference is more important than the magnitude of the difer-
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LISTEN AND YOU'LL SEE
ence. The relationship between objective magnitude and musical significance is far from linear. But what determines the linearity or non-linearity of the magnitude/significance relationship?

**Perspective.** How much the change is valued—determined by how much one cares about the music— influences how much the change is experienced. To some, the change is not even experienced; others may perceive the change but not consider it meaningful; a few will find the difference staggering. But over this broad range of experience, which perception is *true*? Is there really that much difference between components? Are the differences described “true”? Our Western way of looking at the world implies that only one of the above perceptions can be true. I propose that there are as many “true” perceptions as there are listeners.

This idea, I believe, goes a long way toward explaining the conflict between so-called audio “subjectivists” and “objectivists.” To the objectivists, who hear no differences between, say, loudspeaker cables, the subjectivists’ descriptions of differences are either complete fantasy or magnified out of proportion. Whereas the caring listener looks through the eyepiece, the objectivists look at music reproduction from the side of the glass case. Changes in the geometric objects’ position or color are imperceptible when they don’t contribute to meaning and value. But from the eyepiece, even the smallest change has a profound impact on the pattern’s order and meaning. The observer from the side can’t imagine what the observer at the eyepiece is talking about; nothing has changed for him. It’s no wonder that there’s such a dichotomy between the two camps; both look at the same phenomenon, but from radically different perspectives.

This is one reason why blind listening tests are entirely inappropriate for discriminating differences between components; the procedure removes value and meaning from the musical experience. Such tests force the listener to view the music from the side of the glass case, rather than through the eyepiece. He becomes an observer of, rather than a participant in, the experience. If sonic differences have no musical value, they are not experienced. Consequently, any formalized approach to determine if differences exist—and weighing the significance of those differences—that treats listeners and music as merely “subjects” and “stimuli,” is doomed to failure. Further, this thesis explains how anecdotal listening (as practiced in product reviews) can reveal aspects of audio equipment quality not uncovered by formalized listening tests.

A paradigm of the failure of “scientific” listening tests is the case of Swedish Radio’s subjective evaluation of low-bit-rate digital audio encoding/decoding systems. Low-bit-rate encoding (also called data compression) produces huge objective errors in the signal—errors reportedly masked by the desired, correctly coded signal. Consequently, the only way to evaluate such systems is through subjective listening.

Swedish Radio was given the task of designing and carrying out a listening test that would determine which of the competing low-bit-rate codecs (encoder/decoder systems) had the best sound quality. The second—and perhaps more important—part of their charter was to determine whether one of the existing codecs had sufficiently good sound quality to become standardized as the replacement for AM and FM radio broadcasting in Europe. Clearly, this was not a trivial undertaking.

Swedish Radio’s elaborate listening-test methodology was called “triple stimulus, hidden reference, double blind.” Sixty “expert listeners” were used as subjects, with over 20,000 trials conducted on them. The listening-test conditions, methodology, and statistical analysis of the results were beyond scientific reproach. The entire formalized procedure was rational in every way. At the tests’ conclusion, Swedish Radio proclaimed that two of the codecs “…had reached a level of performance where they fulfill the EBU [European Broadcast Union] requirements for a distribution codec.” In other words, two codecs had, in Swedish Radio’s view, good enough sound quality to become the digital replacement for broadcast radio in Europe.¹

Shortly thereafter, a Digital Audio Tape (DAT) of music that had been subjected to these low-bit-rate codecs was sent to Bart Locanthi, chairman of an AES *ad hoc* committee established to study low-bit-rate encoding. Within minutes of listening, he heard

---

¹ See my report from the 10th International Audio Engineering Society Conference in last December’s “Industry Update” for a more complete description of Swedish Radio’s test methodology and results.
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If you appreciate music, audition the Reference 105/3's. For any audiophile system, they are "standard" equipment.
several problems, the most obvious of which was an encoder idle tone at 1.5kHz. He notified Swedish Radio of his observations; they reported having heard no such problems. When a few individuals at Swedish Radio listened again after Mr. Locanthi’s report, they immediately heard the 1.5kHz idle tone.

How could a single listener, under “uncontrolled,” “unscientific,” and anecdotal listening conditions, immediately detect an audible flaw that escaped the scrutiny of 60 “expert” listeners over the course of more than 20,000 “triple stimulus, hidden reference, double blind” trials? And with the future of European broadcasting at stake?

Perspective. That idle tone at 1.5kHz was like an additional geometric shape inserted in the glass case in the museum exhibit. Seen from any perspective except through the eyepiece, the additional shape has no meaning and is therefore inconsequential and escapes detection. But when viewed from a different vantage point, the additional shape completely destroys the order and symmetry of the pattern. Indeed, the intruding object comes to dominate the view.

What creates this difference in perception is value. We value the perfect geometric pattern seen through the eyepiece. We don’t value an incoherent assemblage of shape and color. Similarly, what we value in audio components (and pay good money for) is their ability to convey the music’s meaning and expression; not, for example, their low distortion or wide bandwidth. Technical specifications are like the geometric objects seen from the glass case’s side; though ultimately contributing to the formation of the pattern, they must not be mistaken for the pattern itself.

This thesis raises questions about the transportability of subjective-review impressions to readers’ experiences. If making value judgments about audio equipment quality is so dependent on perspective, how can I, as a reviewer, assume that the reader and potential purchaser of a piece of equipment will share my perspective and thus my value judgments?

The answer is that anyone who has expended the time and expense to read this magazine and others like it shares a broader, common perspective with the reviewer and every other audiophile: We all care about music and how well it is reproduced. Although we may have very different musical tastes and sonic priorities, the fundamental perspective of all audiophiles is identical.

We all look at music through the eyepiece in the glass case.
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WorldRadioHistory
Thanks from Kevin Conklin
Editor:

One of the great perversities of being a human being is that we get wrapped around the axle and annoyed with one another over the most trivial and workaday matters. The happy flip-side of this condition is that humans tend to come through for each other in a crisis. As you all know, Linda, J.D., and I have just been through the roughest crisis in our young family's history.

All of you people in audio—whether manufacturers of perfectionist equipment, the real good-recordings people, or most especially the members of the Academy for the Advancement of High End Audio—have by your generosity reinforced my faith in the essential sweetness of our small, committed community.

First thanks go out to Cara Kallen, Managing Director of the AAHEA, and her husband Elliot. Cara organized the relief effort for us and for John Curl. She phoned us the day after the fire, concern in her voice, reassurance in her manner. Her business and networking skills have been of great help in returning me to audio activities—and I must confess that, after 2½ months, audio is just coming into sight as a priority.

Second, I must thank the Stereophile staff for their support. I note from Larry Archibald's gracious "Final Word" in the December issue that he takes special note that we got our two dogs out of the fire at the last minute. I have met Larry's recently departed and much-loved dog Ralph while in Santa Fe, and share Larry's love of the species. So Linda and I are reminded of those areas where we're so lucky at what was preserved.

I spoke last week to Harry Pearson of The Absolute Sound. Harry, as you may remember, lost his house to a fire in 1984, along with many recordings and much audio gear. Harry had strong and helpful words of empathy. His relating of the experience strengthens our resolution that we can never again allow ourselves to become so attached to material things, transitory as they inevitably turn out to be. Thank you, Harry.

And thank you, good readers, on behalf of Linda and me. Please be reassured that we have landed on our feet, and are enjoying what is really important—the happiest, healthiest one-year-old you ever saw. I will be back to writing shortly, and doing whatever small thing I can to repay our debt to you.

With great affection, Kevin Conklin
Stereophile

Kevin Conklin and his wife, Linda Tasker, lost their house and everything in it in the Oakland Hills fire of 1991, as did amplifier designer John Curl. If you wish to contribute to the Academy for the Advancement of High-End Audio's Relief Fund for Kevin and John, contact Managing Director Cara Kallen at (707) 542-7040 (Fax: 575-1564) for more details. Anyone with specific help, such as technical books or copies of John Curl's technical papers, all of which he lost in the fire, are particularly urged to help out.

—RL

Quantifying the Allison Effect
Editor:

Robert Harley misheard and seriously misunderstood something I said at the October AES NYC convention, and published dam-
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aging misstatements in the January 1992 Stereophile regarding my loudspeaker testing and reviewing.

At the AES convention, I gave a talk discussing the Allison Effect (the recording of the talk is available on cassette H-5; it was based on my paper, preprint 3206). In that talk I related how loudspeaker manufacturers' user manuals typically, albeit vaguely, recommend speaker placement well out from both the front and the side walls of the listening room. I pointed out that then, when the speaker is meant to go on a stand, or when the relevant drivers are positioned on the cabinet at stand-equivalent height (eg, some 18–36" up off the floor), this manufacturer "advice" virtually always produces worst-case performance through approximately the 70–700Hz decade. I related how, when thus located, dozens of loudspeakers I have reviewed for CD Review, Speaker Builder, and the Boston Audio Society Speaker unfortunately sound thinned, unfull, and high-passed, and unfortunately measure with notches, dips, and/or general swaybacks in that range.

As is familiar to those who have studied Roy Allison's papers of the last 20 years, the reason is that the driver(s) reproducing this range are equidistant, or close to equidistant, from the three nearest boundaries: floor, front wall, and side wall. The reflections from these surfaces all return at the same time (as far as the ear is concerned) to the same place, and sum with interference. Playback typically exhibits bad ripple, as noted—valleys and, in relief, accompanying peaks—which the paper documented with dozens of measurements of a speaker in two different but not unusual listening rooms. I also demonstrated how if you stagger the distances, making their relationship not cubical but least-cubical or least-equidistant, the problem diminishes as the notch or valley fills in and smooths out.

Allison himself has written free software calculating the severity of the problem for given drivers and room placements and, of course, for decades he has been designing speakers that work around it.

In my talk, after making the above remarks about receiving loudspeakers for review (often with 6" woofers) and trying to heed the manufacturer's vague suggestions about placement, I then proceeded to explain that:

"You effectively would have the center of the 6" piston at, you know, 2½' by 2½' by 2½'. And I was running these curves—I often would stagger it deliberately ['it' being speaker placement with respect to front wall, side wall, and floor], 'cause I wanted to run as flatter curves in the magazine... [added with a smile] here's an example of reviewers caving in to... something, I don't know... I wanted to have it look as least-ripply, and as less-sway-, little-swaybacked, as I could. But I would still get it ['it' again is speaker position, now for final measurement] in a 2 by 3 by 3 or something like that, and I would get these big swaybacks."

That's verbatim from the tape.

My parenthetical, ironic aside about "caving in" referred to the impulse to be maximally fair, showing the performance of the speaker under review in as good form as is reasonable, as a consequence of trying to stagger the three nearest-boundary distances.

This is what the conscientious owner or subjectivist reviewer does: move the speakers around until they sound the best. Or, in my work, until they measure not worst-case.

Alas, Robert Harley, in his report on the convention, cites this passage—but omits the first and last sentences. He then writes that I "manipulated [my] measurements" and made "adjustments" and, finally, that "Fudging measurements data to make a product more 'flattering' for the manufacturer is a serious breach of journalistic ethics."

True enough about the last statement. But Harley didn't get it. "Staggering" refers to moving cabinets around; "flattering" means "in a favorable light." Faking measurements is a serious matter and a serious, harmful charge. However, I said no such thing in my talk, and for the record: I have never altered any test results whatsoever, in any loudspeaker review, in any venue. My printed curves are always how the speaker precisely, actually performed, and the test conditions (including boundary placement) usually are specified. Common sense might have led Harley to ask whether a working reviewer really would admit at a professional meeting that his published measurements were fraudulent. Simple professionalism might have led him to ask about it in the Q&A session after the talk. Common courtesy might subsequently have led him to do the same thing prior to printing an accusation of falsification.

As for Harley's other comments about me and my work:
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Take a test drive today. Your ears will thank you.
First, following his own paper, I myself did not “attack [Harley’s] integrity as an equipment reviewer.” Until this incident I’ve had no reason to think Harley lacking in integrity. I simply asked him how come he can resist the placebo effect. I also recall being last in the questioners’ line, not “among the first.” (It suddenly occurs to me that maybe this whole thing is simply Harley’s retaliation to perceived insult.)

Second, regarding his implication that something is wrong with a “steady-state [measurement] technique”: If Harley (or John Atkinson, for that matter, or indeed KEF’s Laurie Fincham, all of whom he cites) knows drawbacks to pink noise as a signal for this kind of testing, that would be a good research paper for an AES convention. (Or at least please cite the literature.) Specifically, if Harley thinks the ear does not in fact fuse musical or vocal sounds arriving within the first several milliseconds, that too would make an interesting research paper—and would be real news besides. For speakers nine or so feet away and at seated ear height, the floor reflection, which is what causes the Allison Effect (upper-bass/lower-midrange notching), arrives to the listening position only a couple of ms after the direct sound. And it is this notch that you want to fill in with the direct, tangential, and oblique reflections from the front and side walls.

Which is what my paper and talk were about in the first place. David Moran

Contributing Editor, Speaker Builder

THE BEST DAMN POPULAR MUSIC CRITIC OUT THERE?
Editor:
On the whole, I believe Stereophile is providing its readers with some of the most thoughtful album reviews to be found anywhere today, in particular the work of Richard Lehnert. It was the love of music that brought me to high-end audio equipment, so it is heartening that you feel an obligation to inform your readers about the music itself, without which, of course, none of this wonderful equipment would matter.

Richard Lehnert’s review of Bob Dylan’s The Bootleg Series [in July 1991] has become something of an evangelical cause for me (hopefully resulting in a slight Stereophile sales boost); not only was it the most right review of The Bootleg Series to be done so far (and I think I’ve read them all), but, for my money, no other review even came very close. I hope to speak for most of my fellow “Dylan Heads” when I say, “Thanks so much for giving us easily the best Dylan review of the year.”

It was therefore doubly gratifying then to see Mr. Lehnert give an equally splendid review of Van Morrison’s Hymns to the Silence (for me, too, the other monster release of 1991). His review in Vol.14 No.12 was an altogether more useful accomplishment because most critics could at least partially understand the significance of the Dylan release; sad to say at this time, apparently not so for Hymns to the Silence. In any event, Mr. Lehnert seems to have the same visceral and emotional reaction to Van’s music as many of us do, and he has a real gift in his ability to articulate the emotional quality that these musicians give us. As an aside, it is also terrific to find a critic who understands the important Van Morrison albums (eg. Astral Weeks, St. Dominic’s Preview, Into the Music). For my money, Richard Lehnert is the best damn popular music critic out there at this time. His work is often reminiscent of the late, great Lester Bangs’s best pieces of a generation ago. As JA stated in Vol.14 No.9, of Mr. Lehnert’s work, “no editor would or could want for more.” Amen.

Andrew MacGowan III
Rochester, NY

Thanks!

—RL

MUSIC VS. HI-FI
Editor:
Having read “As Reviewers See It” (Vol.14 No.12), I feel inclined to add my tuppence worth. The whole point of this hobby of ours is to enjoy music. A good hi-fi is one that stimulates your interest in music, broadens your musical tastes, and basically makes you want to switch off the TV and throw on some tunes. All this talk of transparency, soundstaging, image depth, etc. is meaningless unless it translates into an enjoyable experience. Personally, hearing every squeal, cough, or thud in vivid detail is more a distraction than a sign of a “well-sorted” system. Take the Avalon speakers JA reviewed [in January ’91]. They seem to be hi-fi hell rather than sonic nirvana. A Class A headache.

Some audiophiles are under the delusion that spending vast amounts on esoteric equipment equates to a greater love of music. In
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a lot of cases the opposite is true. They sit there with their heads clamped into the perfect listening position, waiting for the third violinist from the left in the second row to scratch his crotch. Who cares about the beauty of the music? If they don't hear that scratch, then two hours of tweaking will ensue. We're having fun now.

Sure we want to get the best from our investment, but that shouldn't get in the way of the music. If a piece of music moves you, then it should do so whether you hear it on the clock-radio or through a pair of Apogee Grands. I don't know any "audiophiles." I do know a lot of people who are passionate about music but own a rack system where the main design criterion seems to be that the speakers should be the same height as the cabinet that the electronics are housed in. I'll never argue with someone who says they won't spend $2000 on a "proper" hi-fi because they would rather purchase a cheap mini system and spend the rest on music. Would you?

Let's get back to basics. Being an audiophile isn't about the girth of your interconnects, the heat output of your class-A amplifier; it's about wanting to hear music you like in a way which you feel most closely approximates your perception of reality. This perception is different for everyone; there is no right or wrong. I have no idea what the "correct" sound is for any of my records. All I know is some hi-fi equipment gets the music across and some doesn't. The hi-fi experience is about tapping your feet, singing along, or being the conductor, not tweaking the system every half-hour. Yes, I wait impatiently every month for the latest conjecture on DACs, cables, or Kontak ear cleaner, but what makes it all worthwhile? Easy. When I slap a record on the Linn and do my own version of Karaoke. (Keep giving the more somber—or is that enlightened?—among us a kick in the butt, CG!) Nuff said. Warren Hodgson

Ottawa, Ontario, Canada

**MUSIC VS. MASERS**

Editor:

I happened to glance at JA's "As We See It," "The Day the Music Died," in your November '91 issue. He mentioned no longer getting the same thrill out of Dvorák's "New World" Symphony as he did when he first started collecting records. There is one general reason why one might not enjoy classical music at this time, and there are some techniques to ensure that someone else is not allowed to enjoy classical music.

The small maser is a terrorist weapon that is widespread throughout the US. Obviously energy-beam equipment (masers) can be used to cause pain or to cause a burn on a person's skin. More subtle uses of energy-beam equipment would be to cause a growth in a person's body, to cause strange marks on a person's skin, or to transmit sounds to a person. All the symptoms of cancer, AIDS, and schizophrenia can be caused by energy-beam equipment. It is likely that all of those diseases will be found to be frauds (ie, to be energy-beam radiation symptoms)...

Why should one enjoy classical music during a genocide, during a time when for more than 40 years talented people who might have contributed much to music have been tortured or killed by terrorists equipped with energy-beam equipment that a college freshman physics major should be able to find?

When I try to listen to my CDs, I get to listen to the idiotic comments of a nearby terrorist group and to hissing sounds that they transmit. I get to have maser-caused pains as I listen, and I get to have preceding parts of a piece wiped from my memory by radiation techniques.

Possibly some year the US government will start seizing the exotic masers used by terrorist groups. Perhaps 20 years or so after that culture will start to reappear.

**NORMAN J. W. LEE**

Napa, CA

**DEBATES & LEVIES**

Editor:

The Great Debate: One of my first exposures to the ABX test methodology was some years back when Stereo Review did its first "All CD Players Sound the Same" article. The cheapest player of the group tested was a model I owned and had purchased because I wanted a minimum monetary investment until I had assessed the technology. Years ago, before foods were routinely fortified, someone once said that if you were stranded on a desert island full of Wonder Bread, you would starve to death. It was my sudden realization that Stereo Review was the white bread of the audio industry that caused me to stop reading them.

Home Taping Levies: Shortly after reading the book *Hitmen* by Fredric Dannen, I came
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**"THE AFFORDABLE HIGH END"**
across David Basskin's letter in the December '91 issue of Stereophile. One of my main objections to the levy, Mr. Basskin, is my belief that the artists and song writers most deserving of the money collected are the least likely to see any of it. The main proponents of this little scheme are almost singlehandedly responsible for making the term "business ethics" the oxymoron it is today. If you were to make a list of the things most responsible for preventing the artist/writer from getting his/her due, the music industry's treatment of them would be at the top of the list and home taping would be at the bottom. Business practices designed to screw the artist/writer out of his/her deserved compensation are so commonplace in the music industry, they are considered standard operating procedure, yet indie promoters and record execs are banking millions. No, Mr. Basskin, I'm not opposed to the artist/writer getting deserved compensation; I'm opposed to throwing good money after bad.

WILL WRIGHT
Seattle, WA

LEVIES & RIGHTS
Editor:
David A. Basskin's letter (Vol.14 No.2) espousing and defending a home taping levy, I think missed two points which are at issue in the controversy.

First, Mr. Basskin does not make clear his underlying philosophy, one which is in direct conflict with the views of many music lovers (I'll avoid the specialized "audiophile" in this context): that the transfer in the sale of a "sound carrier" such as an LP, CD, or cassette is solely of the right to replay the music from the original medium, and not for profit. The purchaser may play, store, discard, destroy, or trade the original sound source, but may not in any way transfer it to another "sound carrier".

Just as the purchaser of a book or magazine believes that possession implies freedom to copy for personal use, so too do many music lovers. They (and I) believe there is no theft in personal use of the material for personal convenience. Any commercial use (ie, sale or profit) of the material would certainly be illegal and unethical, and at that point I concur with Mr. Basskin's evaluation.

Second, the impact of home taping on the income of the industry has not been nearly as financially damaging as Mr. Basskin asserts; possession of a cassette recorder has encouraged many listeners to purchase prerecorded tapes, who otherwise would never have begun to buy. Thus some kind of balance of profit and loss emerges from the kind of unofficial market that he so distrusts. I would like to see, and to evaluate the raw data of, any statistics he may have that demonstrate specific dollar amounts of losses to the industry based on home taping.

Incidentally, he is caught between two contradictory possible implications of his KSA-250 knock-off simile. Either he is implying that the majority of home tapers are selling their copies as pirates, or that making a copy of the Krell circuits for private use is theft. It helps Mr. Basskin's argument to fuzzy-up the distinction between piracy and the legitimate private use (and we already have enough indistinct areas in the controversy), but it doesn't deal with the clear real issues.

I suspect that Mr. Basskin would be happiest if each of us paid a royalty each time we played a "sound carrier," because then the performers would be receiving payment for each time they "performed." The real world allows some apparent inequities, because there are several conflicting sets of "rights," all of which cannot be fully satisfied simultaneously. I agree with Mr. Basskin that piracy is theft, and is both crime and a violation of ethics. I maintain that private, personal use— including copying—is neither piracy nor theft, and I find the effort to tax such use reprehensible. In addition, it has the effect of dampening creativity, as does a non-defeatable copy protection system.

I am a recent subscriber, having heard about Stereophile for some time. No other magazine that I have read, including Stereo Review, Audio, Hi-Fi News & Record Review, etc., has offered the quality of editorial comment, or the availability of forum, that your publication does. Keep it up—please!

JAMES E. MOORE
Pompton Plains, NJ

WHERE WERE THE ANTI-TAX LETTERS?
Editor:
I cannot believe that you do not censor your letters when you only print pro-tape-tax letters. Where are the tax-is-theft fanatics who so often write to criticize government support of the arts? As Oscar Wilde said: "Quiet!
"a modestly priced superachiever"
— Robert Harley
Stereophile, Vol. 14, No. 11
Nov. 1991

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— Robert Harley
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excellent! Congratulations to Corey Greenberg for not getting sucked into the deviousness of Dugan, et al.  
Owen Evans  
Osgoode, Ontario, Canada

I first saw “bloviation” used in Strobe Talbott’s “How tout le monde Missed the Story” in the October 28, 1991 issue of Time magazine.—RH

According to Webster’s Third New International Dictionary of the English Language (Unabridged), “to bloviate” is “to orate verbosebly and windily.”  
—RL

CREDIBLE CAUSES & CABLES  
Editor:  
Point: “As We See It,” January ’92.

Take a good objective look at some of the high-end audiophile claims, explanations of some claims (if any are given), and prices charged for some high-end products. Add in subjective reviewing as a whole. Total everything up.

Are you really surprised that people like Dan Dugan can find followers and believers for his “crusade”?  
I’m not surprised at all.

I wonder: Who appears to have a more credible case to the lawmakers, Dan Dugan or the high-end audio industry? Something to think about, before it is too late.

Thomas L. Hauk  
San Antonio, TX

CABLES & THE AUDIO PRESS  
Editor:

Robert Harley’s report on “Audio McCarthyism” at the Audio Engineering Society’s 1991 meeting left me with mixed feelings. First, I’m not an objectivist regarding audio equipment evaluation. I reject the idea that an engineer (who hasn’t listened himself and who might have tin ears in any event) can tell me I’m not hearing something that I am in fact hearing. However, on the issue of audio cables, I have to admit a certain sympathy for the views of Mr. Lopez, the New York consumer cop.

The audio press simply hasn’t done its job in informing the public about cables; as for the high-end industry, it seems to have an actual vested interest in spreading confusion and mysticism here.

Years ago, manufacturers assumed a responsibility to inform consumers as to the general characteristics required for interconnect cables. For example, the instruction book for the McIntosh C-11 tube preamp, ca 1962, states as follows: “The capacitive reactance of connecting audio cables should not be less than 8,000 ohms at 20,000 cycles [hertz]. This is the reactance of a capacity of 1,000 mmf [pF]. Audio cable having a capacity of 25 mmf [pF] per foot may be 40 feet long; 13.5 mmf [pF] per foot cable may be 75 feet long.” This was written at a time when no audio retailer made any serious money selling interconnects.

By comparison, the manual for my Audio Research SP-10 preamp, while full of detail on most subjects, states only this regarding cables: “At the performance level of the SP-10 most audio interconnect cables will indeed degrade the sound quality. Only the very best available are really suitable for this application. Be sure to discuss this with your authorized Audio Research dealer.”

My reaction to this is, what’s the big secret, Audio Research? Surely Audio Research employs engineers who are able to provide minimum cable specifications. I’m not asserting that any cable meeting these minimum specs will be adequate, simply that the consumer doesn’t know where to begin when trying out cables without knowing the engineers’ intended minimum requirements. Without this information, a consumer may well choose a very expensive cable that pleases him only because it provides a desired alteration of frequency response, a result that could have been obtained much more cheaply. The high-end industry’s argument that cable quality is more than a matter of inductance, resistance, and capacitance would be more impressive if the industry actually supplied these basic specifications to the consumer so apples could be compared with apples, etc.

One striking feature about today’s high-end audio retailing is the great effort retailers undertake to sell extraordinarily high-priced cables and interconnects. The importance of these is stressed emphatically by salesmen who have only the dimmest idea of what “reactance” might be. Since these megabuck interconnects are, with all due regard for their elaborate assembly and finish, still basically just wire, you don’t have to have an MBA to realize that the markup is considerable. In fact, it is obvious that high-end retailers benefit from the same sales strategy that automobile retailers traditionally relied on—that is,
once bargaining has been completed for the basic item the customer came in for, and his sales resistance has been conquered, sell him some optional "accessories" with a much higher markup. There's nothing illegal or grossly unethical about this sales practice, but a consumer-oriented press ought to inform consumers to be wary of it. In the case of cables and interconnects, it generally has not done so.

For example, many highly touted interconnects feature beautifully finished, precious-metal RCA plugs. The general audio public is probably not aware that the RCA plug is inherently a bad design. It would often be cheaper, and much better technically speaking, for a consumer to hire a technician to hardwire his cables in place, or to fit the gear for professional XLR or other connectors, than to purchase these "Rolex" interconnects. (The argument that such a modification would void the manufacturer's warranty, other than for the actual parts replaced or modified, is ludicrous, legally speaking.) And it certainly would be far cheaper for manufacturers of consumer audio gear to provide screw terminals (as professional gear does) as an alternative to RCA jacks. But, of course, screw terminals would deprive the retailer of the ability to sell RCA plug "jewelry" to the public. I am not so puritanical as to deny to any audiophile the pleasure of owning these handsome golden items; but I suspect that many buyers have thought they were buying them for sound, not looks. Where is the voice of the supposedly consumer-oriented audio press on this issue? Can one be forgiven for suspecting that your silence is related to your apparently considerable advertising revenue from interconnect producers, judging from their numerous glossy (and totally uninformative) ads in each month's Stereophile?

Before waving the bloody shirt of McCarthyism on the interconnect issue, the press and industry need to clean up their act.

JOHN J. McFADDEN
Bryn Mawr, PA

The answer to Mr. McFadden's question is: no connection. And no silence either, as far as I am aware.

—JA

CABLES & THE GOVERNMENT
Editor:

Ironically, the major threat to progress turns out to be an institution which purports to encourage progress—government. I recommend that all lovers of recorded music read (or re-read) Robert Harley's excellent verbal re-creation of the 1991 Audio Engineering Society Convention's Loudspeaker Cable Workshop in the January 1992 issue and then take some action to prevent the likes of Dan Dugan from using government to promote their special interests.

It is well-known to those who study public choice that government responds to special-interest groups (typically a small minority of the population) because they are organized and vocal, to the detriment of the unorganized silent majority. As a result, many decisions made by government are not optimal. That is, they benefit special-interest groups at the expense of the majority. Comments made at the Workshop by Wilfredo Lopez of the New York Department of Consumer Affairs reveal the impact that an organization such as the AES can have on government policy, to the detriment of progress in the audio industry.

The irony of it all is that an action taken by a government agency—for example, a ruling that if it can't be measured, it can't be heard and therefore it can't be claimed—purportedly would protect consumers from the unscrupulous practices of manufacturers and retailers. The fact of the matter is that there are differences between audio components, including cables, that can be measured by equipment, and there are differences which equipment (other than the human ear) cannot measure. This obviously makes many engineers uncomfortable. As a result, they pressure government, via an association such as the AES, into legislating toward their own interests. If manufacturers and retailers can be prevented from making claims that only trained ears can detect, then engineers have the last word on what equipment sounds best. This obviously yields economic and other advantages to engineers. But it is detrimental to progress in the audio industry because it limits claims of improvements in audio hardware and software to those that can be measured by electronic equipment. The fact that the ear is in many ways a superior piece of equipment is ignored. Progress is thus constrained and the majority ultimately bear the cost.

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government is all too often the source of problems. In its attempt to solve what for a few is a problem (engineers cannot measure some things which the ear can detect), it creates new problems (retarding progress to the detriment of consumers of recorded music; ie, most of us). We must be constantly wary of those who purport to use government to promote the well-being of those other than themselves.

MICHAEL T. SALIBA
New Orleans, LA

TWO OLD LADIES?
Editor:
Now that the objectivists are trying to make you guys illegal (AES report, January 1992), I guess war is declared. The best way to win this one is to pull out.

When you devote so much space to proving that you are right and they are wrong, you sound uncertain of your position. It's interesting and informative to once in a while hear the subjectivist position explained, but when your tone gets angry or combative it brings to mind two ladies swinging purses at each other. Let the other guys be petty. Plow ahead with the truth, and your position will be strengthened.

And hey, your new typeface is great. Kind of small, though. My subjective impressions of it can be conveyed by using some of the common acronyms of the audio biz: THD (Too Hard to Decipher), WPC (What Periods and Commas?), RMS (Reader Must Squint), and LED (Leads to Eyesight Damage).

DOUG SCHARF
Granada Hills, CA

TYPES OF TYPE
Editor:
In response to your request for comments about the new type style, I, for one, found the new type considerably more difficult to read. You stated that the size and spacing were the same as the previous type style, so perhaps it's the boldness (the new style is not as bold) that is making it more difficult to read. Even the headings, though they are now actually a larger type size, are harder to read because of the wimpy thin type. As I read through the articles, I found myself getting fatigued, as one does when listening to a bad audio system.

I hope the business benefits of the new style are significant enough to offset what, to these eyes, is a step backward for your readers. Maybe you could offer a free magnifying glass instead of a free CD as an incentive for subscription renewals.

DENNIS T. KARRAS
River Forest, IL

In response to the widespread complaints about the size of our new type, beginning with this issue we have increased the type size from 8 to 9 point.—RL

A CRITICAL RESPONSE
Editor:
Believe it or not, I rather felt that Greenberg treated me pretty good in his review [of my book, High Fidelity Audio/Video Systems: A Critical Guide for Owners, in Vol. 14 No. 12], given his philosophy. I do want to bring up some points, however. (Readers are advised to re-read his review of my book in the December issue before continuing.)

First, the book costs $23.50 because it is a "library" binding: acid-free paper, library stitching, etc. The circle/Infinity logo on the verso of the title page indicates high quality. The price is well below average for a library-grade paperback binding, which these days is about $29. My publisher specializes in books for libraries, although the book will also be sold to private individuals.

Second, the book is really only "dated" from the perspective of a change-hungry journalist. A lot of the material in it is considered quite up-to-date by at least some reputable people. Just look through the bibliographical data. (CG failed to note that the text has extensive and often very up-to-date book and magazine references to back up most of its contentions.) Yes, a lot of the illustrated gear is no longer in production. However, I pointed out in the introduction that the photos were there to prove a point, not make sales. Also, some of the gear just recently went out of production and the book was in press for a year prior to its coming out last May. I would imagine that most of the stuff listed in Laura Dearborn's book is also no longer being made, but that did not prevent Greenberg from promoting her work. Putting too much new gear in a book can be counterproductive.

Third, I like great music as much as the next audio buff, but I am not afraid to admit that I like great recordings, too. Greenberg implies that I am turned off by old record-
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Witness the sonic quality and effortless convenience of the KRC—the vanguard of a new tradition in high-end audio.
ings by great masters. Okay, that may be the case—sometimes. However, I would imagine that a lot of your people would rather listen to a great recording of a good performance (note, I did not say “bad performance”) than merely a good recording of a great one. I would imagine that at least some of you guys, when one considers that you are constantly trading and buying new stuff, have spent far more money on assorted sound systems over the years than on your record collections. Or do you get most of your stuff for free? Also, what did Corey find so wrong (so much so that he highlighted the quote from the book) in my saying that one could not tell if a performance was good if its details were muddled by a poor recording? As serious buffs, we do want nuance-revealing recordings, don't we?

Fourth, while the book does discuss the underground press in a sometimes negative manner, I think it is unfair to imply that its basic goal was to grind an axe against you people. It also took the “above ground” press to task for sometimes being afraid to deal with the more complex side of audio in a forthright manner, and even pointed out serious problems with the testing that Consumer's Union and the Canadian NRC do. Mr. Greenberg almost makes it seem as if the book is nothing more than a lengthy diatribe against people such as yourself, while, in actuality, only a small part of two chapters dealt with the relationship between audio and the people who favor subjective testing over objective. The book was, as a matter of fact, mostly about audio and video and not the people who deal with the subject.

Fifth, Roy Allison has been a friend of mine for years. I admire him because he has no use for BS or the people who promote it, has ideas about speaker systems that usually parallel mine, and builds good speakers as a result of those ideas. As for the other people you mention in a denigrating manner, Moran and Clark, well, I like them too and consider them quite bright. You failed, incidentally, to mention that I also praised David Hafler, Matti Otala, Mark Davis, Floyd Toole, Stanley Lipshitz, John Vanderkooy, Daniel Queen, Edgar Villchur, Harry Olson, among others—and even Peter Mitchell and Martin Colloms. Much of the material these people have written was listed in the book's bibliographical references and was frequently commended. .

Sixth, while many of the Allison speakers illustrated in the book are out of production, the basic driver designs were pretty much the same as in the newer models, with cabinet styles, crossover configurations, and driver protection circuits being the main differences. If you have an older Allison model and a driver fails, it can be safely replaced by one of the later versions. (They are also produced by Allison in-house and are not OEM models, like so many of those installed in high-end cabinets.) If you feel as I do about the need for flat power and uniform radiation pattern, the coverage I gave those drivers was justified.

Seventh, the reason the Electronic Subwoofer bass boost was dangerous for some woofers is that they were not designed for it. I pointed out in the book that bass-reflex type designs could get into real trouble with ESW operation. Allison said the same thing in the unit’s owner’s manual. With well-designed acoustic suspension woofers, the device could work quite well, particularly if they were fairly bass-potent already. Bass tone controls can also cause problems with those same bass-reflex models, which is why I said that strongly boosting the bass with some speakers could cause trouble. Anyway, I thought my discussion of the potential for over-elevating the bass with some conventional subwoofers was pretty informative. Many buffs turn a subwoofer device into a boom-box.

Eighth, the AR-5 and AR-3a are said to be treble-deficient by some buffs. [They also measure as being treble-deficient.—Ed.] However, with most recordings this may be a plus instead of a minus, particularly if the system, like those AR models, has very wide dispersion and is operated in an acoustically untreated, “living-room-like” area that reflects and supports a large amount of off-axis sound. (The book spent a lot of time on this subject.) If they had any weaknesses, it was that they lacked liquid-cooled (and burnout-resistant) drivers. I still consider them quite up-to-date, if their volume-level limitations are understood. The AR LST was something else, and I stand 100% by what I said regarding its ability to hold its own with most of what is available today, including the often overpriced stuff that your people praise regularly.

Ninth, I did not say all amps sound the same. All properly designed amps sound the same, provided they are not being clipped and not driving really oddball impedance.
MAJOR PERFORMANCE. MINOR DECISION.

FROM THE LEADERS IN RIBBON LOUDSPEAKER TECHNOLOGY COME THREE NEW HYBRID PERFORMERS. CENTAUR MINOR, CENTAUR AND CENTAUR MAJOR EXPAND THE CUTTING EDGE OF AUDIO.
loads. This does not include units with excessively (and intentionally) high output impedances, which skew the frequency response and make the amp sound “different” from more mundane (read, low-priced) models and give you guys the “proof” you need to say that amps sound different. Most amps on the market are properly designed.

Tenth, I thought you came up real short in “dissecting” the accessories chapter. . . Greenberg took most of the statements out of context. (He failed to note, for example, that I indicated that a subharmonic synthesizer is best used with some older pop recordings, which often lack deep bass, that it was inadequate for classical music enhancement, and that it was particularly useful in bringing some video film soundtracks up to snuff, particularly when such sources contained a lot of special-effects audio pyrotechnics.) Incidentally, why didn’t you mention my discussion of felt-tip pens, disc freezing, and Armor All under the “bad” heading? The latter, in particular, was aimed right at you guys.

Finally, I rather doubt that my book would ever turn people who love music away from audio as a hobby. What it should do is show them that it is not necessary to spend the kind of mega-money your crew feels is required to get surprisingly fine sound in the home. (All your Class C and D product ratings do is make poor people feel bad, in spite of what you say.)

Howard Ferstler
Tallahassee, FL

Despite Mr. Ferstler’s spirited defense of his brain-child, I concur with CG’s review judgment that High Fidelity Audio/Video Systems contains too much misinformation, is too much concerned with long-obsolete components, and is too unconnected with the reality of what audiophiles face when deciding what to purchase and why, to be recommendable. Music lovers new to this often maddening hobby who want useful, accurate information should obtain a copy of Laura Dearborn’s Good Sound, published by Quill, William Morrow, price $12.95, and available from The Audio Advisor, as well as from good bookshops.

And Stereophile readers—remember that we highly recommend the components listed in Class C and D of “Recommended Components”? These products offer good, musically satisfying sound at an affordable price. But do you spend more on your systems than on your collections of recordings, as Mr. Ferstler charges? I hope not.

—JA

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Stereophile, March 1992 WorldRadioHistory
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Shortly after Christmas, Philips executives revised the program for launching the Digital Compact Cassette. They had previously announced plans for a gala April 30 “worldwide DCC launch party” in Paris, coinciding with the opening of the European Disney theme park nearby. Publicity for the new digital tape system would get a free piggyback ride on all the media attention that will be focused on the Eurodisney opening, and deliveries of DCC recorders to stores would begin a few weeks later.

That plan had one basic flaw: as with any new operation, production will start slowly and take several months to ramp up to high volume. While the first DCC machines may be delivered to stores during the spring as promised last year, the initial production runs will yield only one or two decks per store. These will be used for in-store demonstrations and to familiarize salespeople with the new format. DCC decks will be available for sale in limited quantities during the summer, and—assuming that no kinks arise—in large quantities around September.

Recognizing the folly of having a worldwide PR blitz in the spring for a product that won’t be widely available until fall, Philips canceled the April 30 Paris launch. The main advertising campaign for DCC will coincide with the general availability of machines, as well as several hundred prerecorded DCC titles, when the kids go back to school.

Eventually DCC decks will cost less than DAT machines, but at first they will cost more. Sony knocked $200 off the prices of two DAT recorders before Christmas, yielding “street” prices below $600. But the first DCC machine from Philips will list for $700. DCC decks made in Japan and carrying the Philips-owned Marantz brand will cost even more, around $800 in black and $900 with a gold-colored front panel. At a heavily attended press conference on the eve of the Winter CES, Philips executives vowed they will not make the same mistake with DCC that they did with CD—allowing Japanese companies to dominate the market. As the DCC format’s creator, Philips and its associated brands will not only be first to market, but will also bring out a variety of models in the fall, including car and portable versions.

This seemed an obvious shot at Sony, whose campaign to become the world leader in all things digital has included flooding the market with a staggering variety of CD players at every conceivable price point. In a recent count, Sony was selling more than 30 “different” CD players, some only $30 apart in price. A third of these were porta-
The Air Tight ATM-3 mono-block amplifier was born to fulfill many an audiophile’s fantasy. A masterpiece of sonic brilliance, classically inspired, designed and crafted in the quest of sonic perfection. Indeed, the ATM-3 is a work of art deserving of the phrase, "SOUND THAT HAS SHAPE."
ble, car, or combi-laserdisc models; I didn't count boomboxes.

In the expected "format war" between DCC and Sony's MiniDisc, DCC appears to have the lead—if only because Sony, with no new products to announce, chose not to exhibit any equipment at the Winter CES. But Sony did publish an ad reminding everyone that, among digital recording formats, only the DAT provides an exact bit-by-bit copy of a CD. By implication, a DAT deck is a reference-quality recorder. If a DCC recorder will cost up to 50% more and doesn't preserve the original datastream, why would you want one? (On the other hand, remember the "bits is bits" fallacy; an accurate datastream is not, by itself, a guarantee of great sound. D/A circuits in DAT recorders, as in CD players, vary in sound quality.)

Audiophiles have already questioned whether the DCC can equal a CD's sound while using only a fourth as many bits. To offset such doubts, it appears that the publicity campaign for the DCC will include suggestions that the DCC could actually sound better than a CD! As reported by Martin Colloms in last month's "Update," the Decca Recording Center in England has experimented with an 18-bit version of DCC that has a wider dynamic range than CD. As described here in April 1991, during playback the DCC's compressed PASC code is converted to conventional 16-bit linear PCM—with a nominal dynamic limit of 96dB—before it is decoded to analog. If it were possible to convert it to 18-bit PCM instead, the potential 105dB dynamic range of the PASC code could be preserved. Whether this may lead eventually to 18-bit "audiophile" DCC recorders, or to professional studio DCC machines, is unclear. In any case, equating a single parameter such as bit-rate or dynamic range to overall sound quality is another fallacy.

**UK: Martin Colloms**

Following the listening comparisons on DCC (see "Update," February 1992, pp.47-57), Decca kindly allowed me the use of their facilities in conjunction with a loaned CD-R (recordable CD) machine to devise a test to compare the original U-Matic format, 16-bit master with the commercial CD pressing of the same. A CD was recorded onto CD-R (the transport used for the CD transfer was a Meridian 602 in wired coaxial mode), as well as the same music track fed direct from the Sony U-Matic digital master tape. The CD-R storage unit CD-R was a Marantz; the replay CD-R was an early prototype from Meridian. The digital output of each setup was taken to a Theta Pro Basic which fed Meridian 605 power amps and Wilson WATT 3/Puppies via a passive Penny & Giles controller.

For this test, a Decca master of the Christopher Hogwood performance of Handel's Messiah was used. A copy of a CD made on a CD-R is generally judged to have replay quality slightly superior to that of the original CD—see later. My conclusion was that the transfer from the Sony U-Matic master was superior to the CD copy by 5–10%. The CD source sounded a little less immediate and involving, slightly less sharply focused and defined, possessing a hint of darkening and veiling and with marginally less depth and ambience. To put this in context, this difference was rather less than that apparent between optical and wired decoder connections, using Toslink for the optical link.

It did prove that treatments such as the absorptive green paint and other similar products do help a standard CD sound a little closer to the original master. Treating the CD in question helped to bridge the gap heard by comparison with the master transfer. One indication is that properly dithered, high-resolution A/D data would produce better-sounding master CD recordings if stored directly on a CD-R machine. CDs made from a CD-R master are likely to sound better than those made via the traditional videotape process; this route will prove popular with some of the specialist audiophile-oriented recording engineers.

In fact, while this report was being prepared, recording engineer Tony Faulkner was trying out CD-R for mastering. He produced very promising results, essentially comparable with his own excellent multi-track Mitsubishi recorder at a rather consequential $35,000!! We certainly agree that, in the digital domain, CD-R is a better-sounding medium than R-DAT, and in many
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In a further test, a Theta Data transport was used to replay a series of CDs from my collection into the CD-R to produce a demo compilation. At the end, the recording was subjected to the final “fixing” process to code it properly for replay on any CD player. (This fixing involves writing the final ToC—Table of Contents—to the appropriate area on the inside edge of the data area.) Comparisons were then made via the Theta Data/DS Pro Basic between the CD originals and the CD-R compilation copy. User reports had already indicated that the copy would sound better in several respects—this was found to be the case. Some of the “green pen” effect was heard; that type of general improvement which has now been confirmed as a closer approach to the original master. Background noise was quieter, allowing for a clearer window into the depth domain. Instrumental timbres were more natural, while the treble was felt to be noticeably purer with less grain. Focus was slightly improved, the overall representation more relaxed.

Nevertheless, aided by the fine temporal resolution of the Meridian 605/WATT 3/ Puppy combination, it was also evident that there was a reduction in rhythmic involvement and subjective tuning precision on the CD-R copy; on grounds of maximum musical involvement, the original CD was preferred in many cases.

This was, however, most specialized test, and I do not feel that the result should be prematurely extrapolated to the sound of a CD-R used in a live recording application. Too many other dependent variables are involved to make that assumption. In a similar test using a top-line R-DAT transport, not only was the timing significantly impaired, but also those aspects where CD-R is audibly strong.

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**THE DIFFERENCE BETWEEN THE CD AND THE CD-R COPY WAS NOT SUBTLE.**

Why should such a major difference in quality be heard between CD and CD-R when the data are the same? According to Bob Stuart, the CD-R pit shape is much better defined than with a conventional CD. In addition, the intrinsic data jitter on the CD-R is lower, while the player focus and tracking servos also have an easier time of it. The overall result is that the inherent jitter in the data ultimately presented to the DAC is said to be considerably lower with the CD-R version of those data than it is with the original CD.

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**UK: Ken Kessler**

From the most unexpected quarter came a recent attack on CD which is so eloquent that I’m copying it verbatim. Best of all, it comes not from an audiophile but from a respected musician.

For those of you unfamiliar with Neil Young, he’s one of the very few fortysomething rockers with serious credibility among today’s musical guerillas. Sonic Youth collaborates with him, the Icicle Works adored him, and a cluster of the most radical recorded a disc of cover versions to pay their respects. From Buffalo Springfield to Crosby, Stills, Nash & Young to seminal works with Crazy Horse, Young has shown remarkable

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**US: John Atkinson**

At the 1992 WCES, Meridian’s Bob Stuart gave me the opportunity to compare a CD with a CD-R copy made from it. I had to agree that the CD-R sounded significantly better, in that there was less treble grain, more image depth, and a better sense of the recorded ambience. The CD used was a violin and piano recording released by Peter McGrath on his Audiofon label; Bob Stuart had made a copy using the prototype Meridian CD-R recorder; the playback system was a Meridian 602 transport feeding the Meridian D6000 loudspeakers. The difference between the CD and the copy was not subtle. As Peter McGrath, who was also listening, exclaimed, “That’s impossible!” From the same data—Bob had checked—the CD-R produced a sound that, according to Peter, was much nearer that of the original, particularly in the sense of more correctly reproducing the nature of the hall acoustic.
digital is good enough so that it sounds like music... but the brain is not challenged.

Yeah, I'm still listening to and (when I can find it) buying vinyl. I'm not certain that it will be around much longer, despite rear-guard action like a new label called Vital (from the folks who make VTL tube electronics) and the announcement in Goldmine that a new company has appeared in the US which is licensing material by the Beatles, the Rolling Stones, and others for release on 7" 45rpm singles. Talk about fighting the good fight.

Will the vinyl junkies simply drift away? Will they go the way of Linn and join the enemy? Or will they continue to spread the word? I learned of Neil Young's remarks only
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THE INTERNATIONAL SUMMER CONSUMER ELECTRONICS SHOW '92
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because Ricardo Franassovici of UK high-end distributor Absolute Sounds was so taken by the interview that he taped it and sent out a dozen copies to others who'd sympathize.

I'm glad I was on the list.

US: Jack English

Like so many other products in our world today, audio equipment is often packaged with styrofoam "peanuts," the loose plastic filler which cushions a product in its carton. This material, christened "ghost guano" by Stereophile's erstwhile Shipping and Receiving Clerk, Danny Sandoval, is essential for the safe transportation of equipment from manufacturer to dealer or customer. As we have also come to know, styrofoam is less than ideal as a biodegradable trash product.

I was recently quite pleased and surprised to receive a series of Bricker's International Directories of executive education programs from Peterson's of Princeton, NJ. The directories were packaged with a new type of peanut called ECO-FOAM. This material is described as composed of over 95% cornstarch that will decompose once saturated with water. It is "biodegradable, nontoxic, and made from an annually renewable resource not requiring deforestation."

When I informed my environmentally sensitive and ever-cynical spouse of this new packaging, she snickered and said something like: "I'll believe it when I see it." So, we put a few pieces of the small, hollow, cylindrically shaped ECO-FOAM into a bowl of water. They dissolved! As claimed, the material is indeed biodegradable once saturated with water. Not willing to eat any of it or feed it to our dog, we'll take their word concerning toxicity. Hopefully, audio manufacturers will take a long look at ECO-FOAM as an alternative product for their loose fill needs.

US: Peter W. Mitchell

According to a longstanding Anglo-American tradition, virtually anything that can be bought can also be made available for bor-

rowing or rental. You can borrow a book from the local public library, or copy obscure technical journals in a university library. You can rent a tool for a day, a car for the weekend, or a house for a year. You can rent a movie from the corner video shop, a floor polisher from Rent-a-Tool, a distortion analyzer from Electro-Rents. You can rent clothes, furniture, party supplies, microphones, an electric wheelchair, even cargo space on a rocket heading for orbit.

What you can't rent is a CD. That wasn't always so; historically, 78s and LP records could be rented like everything else. But the rental market for LPs was always small in the US, for two reasons: 1) New LPs were relatively cheap, with budget labels selling for only $1.98; and 2) LPs in public libraries were typically so scratchy and worn that the idea of renting LPs was offensive to anyone who cared about sound quality. And since the rental market for LPs never grew large enough to undermine record sales, the industry didn't try very hard to stop it—until the CD arrived with its near-immunity to surface damage and wear.

When I heard my first CD I started writing enthusiastic articles about what a boon the CD would be to music. Since digital discs could be played a hundred times and still sound like new, I predicted that the CD would launch an explosion in record rentals. With new CDs costing $20 apiece, people would want to hear them before buying—as they often did a half-century ago, when record stores had listening booths. In 1946, if a new disc seemed interesting you could go into a booth and hear it for yourself, decide whether you liked the music (and the performance), and know that you were buying only the records you liked. But when the vulnerable plastic LP replaced the hard-shellac 78 after 1948, listening booths went out of style. People wanted to buy only factory-fresh LPs, not records that had been played to death in the store. As a result, when I was building my LP collection during the '60s and '70s, I often had to make buying decisions on blind faith. If the performance or sound quality turned out to be unsatisfactory, I was stuck with the disc; record stores wouldn't take back a record after it had been played, unless it was an obviously defective pressing. After a few years I owned over 1000 LPs, of which there were at least 200 that I

---

1 It has also been suggested (I forget by whom) that popped popcorn also makes an ideal, biodegradable packaging material.

—JA

Stereophile, March 1992

WorldRadioHistory 45
evocative performance
the evolution of perfection
never played a second time and would gladly have sold or traded if I could find a buyer. But there was very little market for used LPs in those days.

My initial reaction to hearing the first CDs in Paris a decade ago was that this wear-free medium would bring back the practice of auditioning recordings before you bought them. I wasn't thinking of in-store listening booths, which were more practical with four-minute 78s than with hour-long CDs. (Though my favorite CD store, Covent Garden Records at 84 Charing Cross, London, did have CD players with headphones as well as a separate listening room, allowing customers to sample CDs before buying them.) The idea that got me excited was the prospect of being able to rent CDs from a local store for $1 or so, listen to them at home through my own audio system, and decide which ones were worth paying $20 to keep.

Not only would this enable me to build a much more satisfying record collection; it also would encourage me to try out a broad range of music and performances that I would never gamble on buying unheard. If I could rent a half-dozen recordings of the Brahms First and hear them at home, I would then be ready to buy one (or two) with much more confidence. And if I could rent discs of unfamiliar symphonies by George Lloyd, Arvo Pärt, Dmitri Shostakovich, and David del Tredici, I would soon discover and buy many wonderful recordings of music that I would never have known if I had to gamble $20/disc without auditioning.

Since I was confident that others would share this feeling, I made two predictions about the impact of the CD: 1) CD rentals would be an explosive business, and 2) By giving listeners a no-risk opportunity to hear unfamiliar composers, new performers, and small record labels, CD rentals would get the record business out of the Top-40 mentality and stimulate a much bigger, broader, healthier market for recorded music.

Other people had the same idea, and a few CD rental shops were launched, but they didn't last long. The RIAA became aware that CDs could be rented, and in the minds of industry bureaucrats that could mean only one thing: lost sales. Every rented CD would be copied onto tape and would never be purchased. Worse yet, copying a CD onto tape would yield a better-sounding tape than the equivalent store-bought cassette. Conclusion: CD rentals would not only undermine CD sales, they would also undercut the market for recorded tapes.

The RIAA panicked, went to Washington, and persuaded Congress to pass a law banning CD rentals. It happened so fast that nobody had a chance to testify against the new law, or to explain why CD rentals might actually stimulate a bigger and healthier record business. Consumers lost the battle for CD rentals during the first years of the CD, before most of us ever bought our first CD player.

THE RIAA PERSUADED CONGRESS TO PASS A LAW BANNING CD RENTALS.

I still believe I was right, and that if CD rentals had become commonplace the record industry would have been a far healthier business. Furthermore, with cheap CD rentals on every corner CD players would now be in every US home, instead of only one out of four. But I'll never convince the RIAA that they were wrong to ban CD rentals; the last few years have been the most profitable in the industry's history, partly because CD prices have been kept artificially high.

Fortunately no one invested a lot of money on my prediction that CD rentals would become a big business. Curiously, the prediction that rentals would eventually stimulate a bigger market for sales was finally proved true—but not for CDs. The business of renting movies on videotape got its start around the same time as the CD. The MPAA (Motion Picture Association of America), being no smarter than the RIAA, also tried to get Congress to ban videotape rentals. The movie studios wanted to continue selling tapes at $80 apiece and keep all the profit; they resented the idea that local video shops could make a profit renting tapes that the studios regarded as "their" copyrighted property. But 10,000 video rental shops were already in business, and they protested vociferously that the MPAA was trying to steal their businesses away from them.

The MPAA lost that battle, and today the studios are grateful (though they still resent it). Videotapes are now the most profitable
"Line protection - you can pay a little for it now, or you can pay a lot for it later." — Ken Pohlman, AUDIO, November 1987.

Regardless of how sophisticated your stereo and video system is, it may never achieve its full potential if plugged directly into an AC outlet. Raw and unprocessed AC power can severely diminish the clarity of audio signals and reduce the resolution of your video picture. Harmful high-voltage spikes and surges can also damage your valuable equipment.

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Listen To The Critics

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— Ken Pohlman, AUDIO, November 1987.

"...the effective suppression of AC 'RF hash' by the ACE-515 improved clarity and lowered noise in all three CD players...the significant improvements in instrumental and vocal harmonic retrieval and hall ambience are superb...it simply appears to allow musical information to be passed through to the listener with less veil and electronic 'haze.'"
— Lewis Lipnick, Stereophile, Vol. 11 No. 4, April 1988.
Recommended accessory in Stereophile, Vol. 12 No. 4, April 1989.

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part of the movie business. Reason: people who rent movies at low cost develop a taste for them, broaden their selection, and gradually find that they want to own some movies to watch again and again. As a result, many movies that bombed in theaters have turned a big profit in video sales. And because the American public has such a huge (and varied) taste for movies, studios have been able to make films catering to more specialized tastes than they ever would have done when they had to rely on theaters for their profits.

The burgeoning business of CD rentals was aborted, thanks to the RIAA's clout in Congress. But in Japan and England, where LPs were always priced higher than in the US, record rentals were a well-established tradition. And when the CD replaced the LP a decade ago, the modest but stable Japanese market for record rentals became a very big business indeed. There are now over 5000 CD shops grossing half a billion dollars annually from rentals. The rental option is popular because in Tokyo the average retail cost of a new CD is $25, giving consumers a strong motivation to buy only the discs they really want to own.

No doubt, as the RIAA feared, some Japanese enthusiasts have been copying rented CDs onto DAT. But CD sales also flourished in Japan, even more rapidly than in the US. Japanese distributors import an impressive variety of CDs from around the world. And the Japanese branches of US record companies were reissuing classic performances on CD much earlier, in much greater variety, and in better-sounding transfers, than their American counterparts have ever done. For example, much of Bruno Walter's recorded legacy was available on Japanese CDs six years ago—a time when CBS had issued only a handful of Walter discs here. As with movies on tape, an active rental market stimulated the growth of an immensely varied market for disc sales.

Nevertheless, the RIAA is attempting to kill the CD rental business in Japan, presumably on the theory that when Japanese consumers get their hands on economical DCC decks they will embark on a frenzy of copying rented CDs onto tape. Revisions to Japanese copyright law are scheduled to take effect this year, presumably including a version of the "royalty" tax on digital media that is now winding its way through the US Congress. US record companies have demanded that the revised law should include a provision banning all rentals of new CDs for a year after their release. A coalition of rental shops negotiated a compromise with Japanese record companies, providing for a three-week rental ban; fans of top-selling rock bands who are eager to hear a new release would have a strong incentive to buy it. But according to Audio Week, the head of the RIAA refused to accept the compromise.

US: Arnis Balgalvis

Remember Reference Recordings' half-speed mastering lathe, which I reported on in "Industry Update" in Vol. 14 No. 9? Well, it's finally ready. The lathe has been successfully refurbished and is now hard at work turning out half-speed-mastered LP versions of several of Prof. Keith Johnson's superb recordings that have until now been available only on CD. Here's what's slated for release in early 1992: Fiestal (RR-38), Hammersmith and other music for wind ensemble by Holst (RR-39), Eddie Daniels playing Brahms and Weber Clarinet Quintets (RR-40), and the Blazing Redheads' Crazed Women (RR-41). As usual for RR, the LPs will come in gatefold jackets featuring comprehensive liner notes about the music and the recording technology. Test pressings have been evaluated and approved for production, according to Reference President Tam Henderson, and Stan Ricker is doing the mastering. (RR will not re-cut any of their already-released LPs, as I had erroneously reported in my September 1991 report. My error caused quite a bit of grief at RR, for which I apologize.)

Other 1992 plans include a number of new recording projects and continuing the preparation of LP editions of works heretofore released only on CD. During a recent trip to England Prof. Johnson committed to tape the
Imagine... a hundred watt per channel power amplifier and preamplifier combination for under a thousand dollars without the usual compromises.

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London Philharmonic performing Malcolm Arnold Overtures, and film music of Robert Farnon with the Royal Philharmonic, all conducted by the composers. The recording site for both sessions was Watford Town Hall, a space recognized for its great acoustics. Whatever your mindset, digital or analog, this is serious!

Negotiations with a number of major labels for rights to re-cut some of their highly regarded recordings continue unabated. Nothing concrete can be announced at this time, but stay tuned—I think it’ll be worth the wait.

UK: Ken Kessler
End of an era? The start of a New Age? The biggest sellout since Quisling? However you look at it, the arrival of the Linn CD player is one of the final nails in the LP’s coffin. Its impact on the British, if not the global, audio community will be monumental.

Although the Naim CD player preceded Linn’s, the Naim came from a company which, while dedicated to analog, never really treated the subject the way Saddam treats the Kurds. Naim simply waited until it felt that CD could perform to an acceptable standard. Try though I may, I cannot attribute to Naim’s Julian Vereker any remarks about CD even remotely as hostile, emotional, irrational, vindictive, or downright ludicrous as those uttered by Linn’s Ivor Tiefenbrun since 1983. So Naim didn’t set itself up quite so much for a fall as did Linn.

I’d love to have had a tap on Linn’s phone lines as editors throughout the UK sucked up to him for the scoop of the review. Whatever you think of CD or Linn, in publishing terms the Linn Karik/Numierik transport/D/A converter combination has to be the hottest product since, oh, Finial’s Laser Turntable.

The tackiness started with one of those pseudo-scoops, when a race to be the first leads magazines to sub-tabloid practices. One organ’s January front cover proudly proclaimed, in yellow and white type, “Unveiled! LINN’S FIRST CD PLAYER. The full exclusive story” (their italics). Inside was a four-page spread, over half taken up by photos, offering some history and lots of technical details.

Anyone buying the issue in the hopes of a full review rather than a feature article will simply have to wait. Or look back to Stereophile’s January issue for the world scoop . . .

What all UK editors will have to decide is, who should do the review? A known Linnie who’ll write, “It’s the best CD player in the universe” because of years of conditioning? A known cynic who’ll hammer it because Linn-bashing always makes good copy? An analog fanatic who’ll hate it before the box is even opened? A CD apologist who’ll use the review to say, “I told you so—even Linn came around eventually”? What none can refute is that the launch of the CD player is a sane business decision. Linn is not, after all, a nonprofit organization; it has to manufacture what people want.

US: Peter W. Mitchell
A new product which was created for Home THX Dolby-surround installations may also have value in two-channel stereo systems. It is a professional-grade equalizer that provides adjustments in narrow 1/3-octave bands plus several “parametric” bands whose bandwidths and center frequencies can be adjusted to compensate for speaker flaws or room-acoustic problems. In addition—and this is the potentially revolutionary part—after you buy the equalizer, a trained THX installer will
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come to your home, set up a signal source and a multi-microphone spectrum analyzer, and fine-tune the equalizer until your system delivers the smoothest response to your listening area.

Equalizers have been the focus of one of the longest-running controversies in audio. Twenty years ago, when most loudspeakers had many obvious deviations from accurate response, it seemed self-evident that equalization could undo these deviations and yield a far more accurate and lifelike sound. Even if you had one of the few truly musical-sounding speakers, such as the KLH Nine electrostatic, its response could be significantly degraded by standing waves, wall reflections, and other room-acoustic problems that an equalizer might compensate for. And if you decided to add a subwoofer, fine-tuning its crossover to achieve a smooth transition from the main speakers was a frustrating headache.

But equalizers had three obvious drawbacks. They were noisy; their corrections usually spanned a full octave; and without a spectrum analyzer (a very expensive tool in those days), the adjustments had to be made by a very slow trial-and-error process. Audiophiles also avoided them because of concerns about veiling of the sound and phase-shift. Even today, most equalizers, including those with built-in spectrum analyzers, still suffer from noise and overly broad corrections.

In principle, these concerns could have been alleviated more than a decade ago. Equalizers can be made as quiet as desired, and portable spectrum analyzers with 1/3-octave resolution have been available for a dozen years, as have "parametric" equalizers that can make narrow-band adjustments. Measuring and fine-tuning a system's in-room response need not be done often. It is best viewed as a one-time proposition, something useful to do when loudspeakers are installed or moved to a different location.

Narrow-band equalizers and 1/3-octave spectrum analyzers are widely used in professional audio circles to smooth the response of studio monitors, concert sound-reinforcement systems, and Dolby Stereo theater speakers. But for home listeners, a high-resolution spectrum analyzer might not be worth its considerable cost, considering how rarely it would be used. A more practical solution is to borrow or rent one when wanted. When I bought a 1/3-octave spectrum analyzer and pink-noise generator a dozen years ago, I started a "hi-fi doctor" service, bringing the equipment to people's homes in order to help them identify speaker faults, find the best speaker placement, and equalize systems for smooth response. I often suggested that audio dealers ought to provide a similar service to their customers, but few did.

High-precision equalization is coming home, thanks to Lucasfilm. When a movie theater obtains THX certification, a Lucasfilm-trained technician visits the theater, measures the audio system's response at typical audience seats, and fine-tunes the equalization to achieve a specified response (essentially flat to 2kHz, followed by a gradual downward slope in the highs). The first Home THX equalizer, intended for connection at the output of a Dolby Pro Logic surround decoder, is manufactured by Rane and will cost $1299. In each of its three primary channels (left, center, right) it provides 1/3-octave EQ from 80 to 800Hz, using "interpolating constant-Q" circuits that minimize interaction between bands, plus two bands per channel of parametric EQ above 1kHz. A separate two-band parametric EQ, in the path to a subwoofer, smooths the latter's response and works on standing-wave problems. After the system measurements and fine-tuning have been done, a blank panel can be bolted over the controls to prevent accidental alteration of the settings.

Who might benefit from it? Anyone whose loudspeakers or listening chair are located close to reflecting room boundaries. To put it another way, the population that might not benefit consists mainly of audiophiles who have superb speakers and who already have arranged their systems to minimize the effects of the listening room. If your speakers and primary chair are located in the middle of the room, if your walls and floor are treated with acoustical absorbers to weaken reflections, and if you sit fairly close to the speakers so that their direct sound is much stronger than any reflected sounds, EQ may have no value for you. For the rest of us, the new THX equalizer and in-home measurement service may finally provide a valid test of the proposition that the benefits of EQ outweigh the potential drawbacks.
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Japan: Thomas J. Norton

The new Sunshine City complex, in the Ikebukuro district on the northwest side of Tokyo, is dominated by the Sunshine 60 Building, at 60 stories the second-tallest building in Asia. The compound includes a large shopping plaza, aquarium, theater, museum, and planetarium. It also has a convention center which, during a five-day period in early October, became the magnet for thousands of audiophiles attending Tokyo’s 40th Audio Fair.

I took this, my first opportunity to attend a Tokyo audio fair, in conjunction with a Technics-sponsored press trip whose main feature was a seminar on the soon-to-be-introduced Digital Compact Cassette, or DCC (see "Industry Update," February 1992).

Though spread out over seven floors of the convention center, the Tokyo fair was smaller than I’d anticipated. Three of the floors were relatively small, but the remainder were enough for several comfortably large, if not huge, exhibits. I mention this only because articles I’ve read in the past concerning the Tokyo show had led me expect something like a mega-CES. Perhaps at one time it was a larger event—I seem to recall seeing references in the past to attendance figures in the quarter-million range. I’d be very surprised if, this year, the total five-day gate totaled more than a small fraction of that. On the Saturday I attended, the crowds were large but not crushing; there was never any problem getting a close look at any display, never a line waiting to get into any room.

By any normal standard, however, the Tokyo show is still a large event. Over 70 manufacturers were on hand to show off their wares, including most of the majors as well as a number of smaller companies. There

- Denon DCD-DX converter
- Denon DCD-PX transport
- Luxman PD-3000 turntable
- Sony TA-NRI monoblock amplifiers
- Panasonic prototype DCC deck
- Epochal turntable and arm

Stereophile, March 1992
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aren't as many of the latter in Japan as in the US and Europe, but they apparently do exist. Particularly striking were the products of a company called Epochal, which included preamps, power amps, and a prototype of their Teragaki turntable and arm. Like many of the displays, this was a silent one, set up in a simple booth off in a corner, but it immediately caught my eye.

But most of the home-grown Japanese high-end products come from the major manufacturers, few of whose visions of the state of the art seem to make their way to the US. Perhaps they feel that the market for such products here is too small and already carved up by established US and European brands. Sony showed their TA-NR1 ($3846 each), a beautifully finished 100W (into 8 ohms) monoblock rated at 550W into 1 ohm. Also shown was the matching TA-ER1 preamplifier, with outboard power supply and balanced inputs (line) and outputs (unbalanced phono inputs are also incorporated). If I read the specifications correctly (for some reason my brochure is in Japanese), the line inputs have very high input and very low output impedances—2 megohm unbalanced (4 megohm balanced) for the input and 2 ohms unbalanced (4 ohms balanced) for the output. I know of at least one US high-end company—Cello—which recommends the use of a very high input impedance for best sonics.

Luxman is another Japanese company which continues to market their top high-end products at home but declines to do so here. What else would you call the M-06a power amplifier, which produces a mere 55Wpc (but class-A, apparently) into 8 ohms (bridgeable to make a 220W monoblock) selling for just under $3000? Bargain-hunters in the Luxman booth could check out the L-570 integrated amplifier (a popular product category in Japan): 50Wpc class-A, and not exactly a loss-leader at $2700. A smaller version offering 100Wpc (only 15 of it class-A) can be yours for about $1700—if you live in Japan. The imposing Luxman PD-3000 turntable was also in evidence, though it appeared to lack a vacuum platter. Luxman was one of the first to introduce this feature in some of their earlier designs.

Denon showed their high-end two-box CD player, the DCD-DX converter, and DCD-PX transport. While I couldn't locate any English-language information on either, both were strikingly styled, particularly the top-loading transport.

Accuphase is a unique Japanese company in that it appears to be moderately large (though certainly no Matsushita or Sony), yet builds only high-end gear. It is a familiar name to American audiophiles, having made periodic appearances in the US market but never really catching on big here. Accuphase was, to my knowledge, the first company to attempt to market a very expensive, two-box CD player three or four years ago. Their products are gorgeous both outside and in, and if a recent rave review by Martin Colloms in the British Hi-Fi News & Record Review of their DP-70V one-piece CD player ($54 lbs) is any indication, they don't skimp on performance for a pretty face, either. Accuphase was one of the few companies making a successful attempt at high-end sound, and doing it through, of all things, a huge pair of Tannoy loudspeakers which are apparently produced only for the Japanese market. It would be nice to see someone make a serious attempt to market the Accuphase line again in the US, though the inevitable import price penalty might make it noncompetitive with US-made high-end gear.

Another well-known Japanese high-end company (apparently smaller than Accuphase, though I don't know that for a fact) which still has a US presence is Stax. They were demonstrating their full-range electrostats—which are marketed here in limited quantities—plus another unique loudspeaker system which is unlikely to be: the pairing of a line-configuration electrostatic driver with a large horn in a truly odd-couple arrangement. It didn't sound half bad; some horn colorations were in evidence, to which the rather lively room may have contributed. But I can't see it catching on outside of Japan, where horn-loaded loudspeakers are still much-revered audiophile status symbols—usually in rooms better suited to minimonitors. Perhaps they're popular precisely because Japanese listening rooms are small; many horns are designed for corner-mount-

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4 Prices given here, when available, are Japanese prices converted at the rate of 130 yen to the dollar.

5 Though they did market such products here from the mid-'70s to the early '80s, if memory serves.
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The big splash at the show was, of course, the new digital formats which will soon be fighting it out in the marketplace for, manufacturers hope, a chance to capture the lucrative market now dominated by analog compact cassette. The products shown were clearly prototypes. Sony was trumpeting their 3" optical recordable Mini Disc, emphasizing its CD-like convenience while downplaying other benefits. The new Digital Compact Cassette attracted a lot of attention at the Panasonic booth, where operational prototypes were being demonstrated. Which way this whole thing will pan out is anyone's guess, though DCC clearly is nearer to being a market reality—which may be all it takes to give it the upper hand.

Other digital recording media were in evidence, though in a rather more low-key fashion. Pioneer showed a CD-R (recordable, standard-size CD) deck for $7300; I can see the Circuit City management drooling in anticipation over this one. Perhaps a more practical product is JVC's HR-Z14 S-VHS video recorder, which incorporates digital audio recording capability using depth multiplexing—the same technique used in VHS Hi-Fi. It can record, simultaneously with (or separately if desired) two channels of full 16-bit digital data sampled at 48kHz, or four channels of 12-bit digital data sampled at 32kHz. A follow-up call to JVC in the US after the show indicated that the company has no current plans to market a similar unit here. JVC also showed their own DCC prototype. JVC is corporately tied to Matsushita (the parent of Panasonic and Technics), so this was not surprising, though JVC's "launch" was more subdued than Panasonic's.

If all of this wasn't enough to produce digital overload, Sony was showing their "Scoop-man," or digital memo-recorder (first discussed here by Peter Mitchell in Vol. 13 No. 5 and Vol. 14 No. 2). The system, originally conceived as a dictation device, uses truly micro-cassettes, smaller than a postage stamp. I somehow managed to miss this part of Sony's booth—perhaps its size was scaled to the format—but others indicated that Sony was actually showing prerecorded software for it. Whether or not this was a serious attempt to introduce a new format or merely an attempt to grab a bit of thunder away from DCC remains to be seen. With its low bit rate and sampling frequency (the original DMR used 12 bits and sampled at 32kHz), it may be digital, but it's unlikely to be a serious music-delivery medium, and risks over-seasoning an already too-spicy digital stew.

While billed as the Tokyo Audio Fair, there was a lot of video in evidence as well. Particularly notable were the wide-screen (16:9 aspect ratio) monitors from a number of manufacturers. These are primarily designed for HDTV (which is now broadcast for several hours each day in Japan), but may also be used with standard NTSC letterboxed films and, if the user desires, standard-ratio broadcasts and video sources. The latter can result in pseudo-wide-screen effects which can be either impressive (except for scanning lines, which become more visible) or weird, with the tops of heads being cut off. Sony demonstrated perhaps the most impressive of these sets, a wide-screen, rear-projection HDTV unit, the KWP-5500HD. The 5500HD has (if I interpret the Japanese spec-sheet correctly) a 55" diagonal screen and sells for just over $22,000. JVC showed their considerably less expensive (under $6000) non-HDTV wide-screen, the AV-36W1 direct view, seen previously at last June's CES in Chicago.

Perhaps more interesting was JVC's AX-V1000 audio/video amplifier incorporating what JVC calls their "Theater Digital Acoustics Processor." The TDAP incorporates sound-field data for a number of reference motion-picture theaters—much as other processors attempt to recreate the "signatures" of various concert halls. Included are Dolby Laboratory's Reference Theater, the Academy Theater, and the sound studios of major movie companies. This is an interesting development in home surround-sound, particularly for its most widespread application, the showing of films on video. It may be the first attempt at not only reproducing the full
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Dolby surround effect, but that effect as it might be experienced in a theater (as it was meant to be heard), not a small living room. (A less ambitious unit having a single theater mode, the AX-V1050, is currently available here.)

Japanese companies weren't the only ones showing at the Tokyo fair, though they certainly had the biggest presence. US and European products were seen here and there, including Spectral, Lineaum, Martin-Logan, Infinity (both the IRS V and the new Renaissance 90 loudspeakers, though only the former was being played when I was there), Sonus Faber (their stunningly styled mega-monitror, the Extrema), Entec (a full-range, two-way loudspeaker previously unseen), Quicksilver, the Valve Amplification Company, and Ensemble. Sennheiser was also on hand with their new $12,000 Orpheus headphones and dedicated tube amplifier. Many of these products were merely static displays in an importer's booth, but some—the IRS Vs and the Sonus Fabers, for example—were actually being demonstrated. And, last but not least, the folks who bring you Q-Sound had a large room with an audio-video setup and were entertaining large crowds. Unfortunately, the sound in their room was so bad that judgments about the Q-Sound process itself were impossible to make.

After the show I spent several hours browsing in Akihabara, Tokyo's electronic mecca. Multi-story department stores specializing in everything electrical and electronic, from washing machines to high-end audio, share space with open stalls under the elevated subway tracks selling component parts and accessories of every description. The variety here is certainly unrivaled by any electronics supply district anywhere in the world that I've ever seen or read about. And the selection of high-end products I saw in one location—the top floor of the Yamagiwa #1 department store—would make any US audio salon green with envy. Would you believe one store carrying Threshold, Spectral, B&W, Quad, Rowland, Spica, Apogee, Audio Research, Rogers, Spendor, Krell, Cello, Avalon, Wilson Audio, and more? The crowds in Akihabara were far larger than those I'd seen at the Audio Fair. If you visit Tokyo when there's no Audio Fair, don't despair; Akihabara is there year-round.

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WorldRadioHistory
Stereophile, March 1992
We continue our celebration of 30 years of continuous publication by publishing one of J. Gordon Holt's earliest "As We See It" articles, from The Stereophile Vol.1 No.3, which was published in early 1963 (not too long after the January/February cover date). Substitute the words "analog" and "digital" for "mono" and "stereo" and this piece would be as valid today. And the "table radio" and "all amplifiers sound the same" arguments are raging still! As is Irving "Bud" Fried, I'm glad to say. We have also included a selection of early readers' letters, including those that prompted JGH to write this "As We See It."

The magazine's circulation in early '63 was just 1300, a far cry from 1992's 60,000+. "It was about this time," recalls Gordon, "that, in trying to place advertisements for Stereophile in the mass-circulation commercial hi-fi magazines, we learned that space was not available to us. One publisher told us, in a moment of rare candor, that it wasn't..."
Audition the B&K M-200s at a Dealer Soon:

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— Sam Tellig, STEREOPHILE, January 1991, Vol. 14, No. 1

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Too Good to Be True
Two letters from readers [see later] started us thinking again about something we've mulled at, off and on, for the past year or so: Does today's high-fidelity equipment, for all its vastly improved performance, actually sound that much better than the best of the early components?

Increasing Numbers of Long-time Audiophiles Are Complaining That Today's Sound Reproduction Is Not as Natural as It Used to Be.

Certainly, the best of today's pickups, amplifiers, and loudspeakers are objectively far superior to anything available ten, or even five years ago. Pickups trace more cleanly at lower forces, amplifiers have lower distortion and higher stability, and speakers have wider range, smoother response, and lower distortion than ever before. Yet increasing numbers of long-time audiophiles are complaining that today's sound reproduction is not as natural as it used to be during the golden age of monophony. Some have even suggested that maybe we need a bit of distortion and peakiness to make things sound right, but good sense would seem to suggest otherwise. After all, fidelity is accuracy, and distortion and peaks are inaccuracies. Yet by comparison with yesterday's systems, today's crop is often accused of sounding rather gray and flat and, somehow, not quite realistic.

Reader Burks claims electrostats just don't sound natural, despite the fact that the best of them measure better than anything hitherto available. Reader Vanderbilt harks back to an old Brociner-Brook-Fairchild system that he recalls as having been more natural than anything he's heard since.

More Disturbing, However, Is the Number of Times We Have Observed This Intangible Quality of Realism from Crummy Little Table-Model Radios.

Of course, it's easy to dismiss all this as the embellishments of memory, which can turn a 15" snowfall during our childhood into the biggest blizzard in history. No doubt, this does account for some of it, but it isn't the whole answer. There are still a lot of excellent, old monophonic systems in use today, several of which we have heard recently. We must admit that some of them do have a certain quality of realism that is lacking in many of the "best" modern setups—a quality that not even stereo can provide. They may have rather muddy bass, and be a bit spitty at the top, but voices and musical instruments sound so natural and alive that you feel as if you could reach right out and touch them.

Perhaps even more disturbing, however, is the number of times we have observed this intangible quality of realism from crummy little table-model radios that could not qualify as high fidelity by any of the standards we normally apply.

Does this mean our standards for evaluating components are all fouled up? Not basically, because distortion is still distortion, whether it makes the sound worse or better. However, it is possible that we have been forgetting or ignoring some "minor" factors that are actually more important than we suspect.

Hearing is simply our reaction to a pattern of pressure waves in the air around us. If we can get exactly the same set of air vibrations to our ears in the living room as would have reached our ears in the concert hall, we will hear a perfect replica of the original sounds.
Hence, the search for smoother response, lower distortion, wider range, better transient response, and all the rest of it. Many loudspeaker designers, for instance, have long claimed that their field was an art as much as a science, which is another way of saying that their speakers somehow seem to sound better when they’re designed with a couple of response deviations in them than they do when they’re made to be linear by measurement. In other words, perhaps it is necessary to compensate for some peculiarities of room acoustics or of amplifier coloration in order to produce linear response at our ears.

We won’t attempt to volunteer any provocative theories about this at this time, but we will bring up a couple of points that might bear looking into. High fidelity started in movie theaters, and horn speaker systems became the standard of quality because, when used with contemporary amplifiers, they provided just the right amount of brilliance and “presence.” But when audiophiles brought these components into their living rooms, the sound was far too brilliant and shrill. Some slightly insane audiophiles, including the partially deaf, liked that kind of sound, but musically oriented listeners soon concluded that, while horns were fine for auditoriums (and palatial living rooms), they had no place in the average home. Direct-radiator speakers became the accepted standard for in-the-home use, because of their “smoother, sweeter” sound.

“Presence” became a dirty word, and most of the improvements in components that were made in subsequent years were aimed at “smoothing out” and “sweetening” their sound. We may have overshot the mark, though, hence the recent complaints about the “sogginess” and “muted” quality of modern systems, and the upsurge of interest in speakers with more presence.

We can’t advocate a return to the sound of yesteryear, but we would like to know what it had that most of today’s equipment lacks. Does anyone have any ideas on the subject?

—JGH

**Backward View?**

Sirs:

I have been waiting for a publication such as *The Stereophile* to come out! There are and have been publications which have given unbiased ratings of audio components (Consumer Union and Audio League), but I always felt that their reports were for the mass market rather than for the audio perfectionist. Top-quality equipment was seldom tested, presumably because the average audiophile would not be interested. Those of us who were interested in the finest equipment had to be content with superlatives, and very little in the way of comparison or criticism of the equipment.

One of the things that sold me on your publication was the statement in your announcement, “. . . we began to realize that there was a real need for some source of forthright, down-to-earth information for the audio perfectionist who wasn’t satisfied with being told that ‘all amplifiers sound pretty much the same.’ ” I have heard this statement, and have even read it in a high-fidelity magazine recently. I was beginning to think that I had the world’s only 24-karat golden ear, because I can hear a difference between amplifiers, especially *preamplifiers*. I now own the supposed “best” in amplifiers, Marantz, but I and most of my friends agree that it doesn’t sound as good as the mono Brook equipment I had previously. Nor is the Marantz Model 7 stereo preamp as transparent-sounding as the Marantz monophonic audio console. I understand that the real perfectionists are buying up the Marantz mono preamps and using them in pairs for stereo, with the Marantz stereo adapter.

My goal in stereo, ironic though it may be, is to have the quality of sound I had 10 years ago.

---

**A Glossary of Advertising Terminology**

**Lifetime stylus**: A needle that will last for the entire life of its tip.

**Spine-tingling brilliance**: Stridency. Also called screech, shriek, or hi-fi.

**Stereo spaciousness**: A curtain of directionality extending all the way across the 2' space between the stereo speakers.

**Absolute speed accuracy**: A term used to describe a precision turntable whose speed is accurate to within ± 5% of 33⅓rpm.

**Inaudible distortion**: Distortion that is inaudible to some people, such as deaf people, dead people, and figments of my imagination.
ago with a Brociner-Klipsch corner horn, the 30W Brook amp and preamp, and a Fairchild 220 cartridge. It had a realism which made you unaware that you were listening to a sound system. Even in mono, it had depth. Perhaps the new transistorized components are what I’m looking for. I hope I will be able to find some of the answers in The Stereophile.

Richard Vanderbilt Rumson, NJ

Musical Paper

Sirs:

I’ve spent hours listening to full-range electrostatics. Fine transient response and clarity, but the piano didn’t sound like a piano, the clarinet didn’t sound like a clarinet, the cello didn’t sound like a cello. The characteristic timbres of the instruments were missing.

I’ve spent hours listening to expanded polystyrene foam speaker systems. They are extremely accurate reproducers, but, unfortunately, unmusical reproducers.

Listening to paper cones and live music has ruined my ears. Pity, really.

G. E. Burks Denver, CO

If transient response, clarity, and accuracy are unmusical, then why fidelity? Back to the acoustical horn?

Bleary Query

Sirs:
I am interested in your hifis. Please send me your catalogue. Are you making discounts?

M. Lbstixt (?) New York, NY

We are discounting catalogues this month. We also have specials on honeydews and watermelons, but hifis are out of stock because of the big freeze in the middlewets.

---

Postscript: Sustenance for Cerebration

The audio perfectionists, who have always led this field because of their refusal to be satisfied with anything, are often referred to as “the lunatic fringe.”

Under the circumstances, we feel it only right and fitting that audio should become known as “the hobby with the fringe on top.”

---

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MAGICAL MOMENTS

Record Producer Jeff Weber talks with Robert Harley about capturing the energy of a live performance.
Jeff Weber has an unusual idea about how stereo records should be made: put the musicians in a room and have them play together, recording the performance live to a 2-track tape machine. Not only that, he somehow thinks that real musicians playing at the same time creates a more musically compelling recording than one made piecemeal with months of overdubs.

Most of us know intuitively that a recording of a band playing live together will be more musically satisfying than one made using the paint-by-numbers approach of multitrack sessions. But surprisingly few people in the recording industry share this vision; virtually all nonclassical records are made by dissecting the music on a multitrack recorder and treating it as a collection of individual monophonic components.

Following his ears and his heart, Jeff Weber has thrown out the old excuses for needing multitrack recording and decided to make records his way. The results are impressive, both musically and sonically. During the past decade he has racked up a string of jazz and pop hits that combine musical honesty, stunning sonics, and great commercial success. Artists he has produced include David Benoit, Kenny Burrell, Chick Corea, Freddie Hubbard, Diane Schuur, Tom Scott, McCoy Tyner, Sarah Vaughan, Tim Weisberg, and Nancy Wilson. Along the way, his records have picked up two Grammys and five other nominations. He has had eleven records in the top ten jazz charts, one of which stayed at number one for three months.

After mastering Stereophile’s Intermezzo CD in Los Angeles last Spring, I spoke with Jeff about musical values, audio technology, and what goes into capturing a magical performance on tape. We began with how he became a record producer. . .

Jeff Weber:

I had no intention of becoming a record producer: I had gone to law school and had been a journalism major. While I was going to college I reviewed records and books and I came across a company called Sheffield Lab that seemed to put out music that was head and heels above the quality put out by anyone else in terms of sonics and excitement. I wrote to the company saying I’d like to review one of their records for our college newspaper. They agreed, and I did the review. I sent the review to them and they then asked me to write the liner notes for one of their records—Thelma Houston’s I’ve Got the Music in Me.

Robert Harley:

A classic.

JW: Very much so. As you can imagine, I was on “Cloud 18.” I wrote liner notes and liner notes and liner notes, and every time I wrote a version, Doug and Lincoln [Sax and Mayorga, Sheffield Lab co-founders] would make all these changes. Finally they decided that they didn’t like what they had changed, so they ended up not using it. But I asked them if, whenever they made a direct-to-disc recording, I could be involved in any capacity—to be able to stand there, work tape machines, keep logs, whatever. So from that time on, the two or three times a year that they recorded, I was the only non-employee of Sheffield who worked on these projects. During that time Doug Sax taught me how to hear. He can hear through brick.

I still had no intention of being in the record business because I intended to go to law school after college. After I got through law school I worked as a journalist for Cashbox [a record industry trade magazine]. During that time, I became West Coast jazz editor and West Coast classical editor. I determined that there were so many lousy records being made that even I, someone who didn’t know anything about making records, could make a record.

I just wanted to challenge myself, make one record, and go back to being a lawyer. So I convinced Discwasher, the record-care product company in Missouri, that they needed an audiophile record to accompany their record-care products. They made me submit a lengthy proposal in which I said
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I had these great guys who wanted to make a record—but I didn’t have them.

After Discwasher gave the go-ahead, I went to these people who I thought would make a great record and said, “Hey, there’s this record company that wants to make a record with you.” I was thinking on my feet—actually thinking on my way to the club. So I managed to put this thing together and we did an album of standards featuring Ray Brown on bass, Louie Bellson on drums, and Paul Smith on piano—Ella Fitzgerald’s piano player.

Once I managed to get them to agree to do this record, I had to figure out how to do it myself. I had no idea about record producing at all. I didn’t even know how to rent a studio, where to find an engineer—nothing. All I knew was that we should do it direct-to-disc because that was the way Doug was doing his records and I thought that this would be the best way. I was scared to death. How could I, a neophyte, possibly make an evaluation on the musical performance of three people who had each been in the business longer than I had been alive? Fortunately, they were tolerant of me and had a good time and Discwasher enjoyed [the result]. They said, “Let’s make two records a year—and why don’t you do them?”

And that’s how I started. I was thrilled. You’ve got to understand that I made $1500 a year—a year—those first few years. I was just so thrilled about making records.

We made a few records, but they weren’t big sellers and we didn’t achieve the success Discwasher wanted. So I moved on to being an independent. I’ve been independent ever since. Over the course of those 12 years, I’ve done about 85 or 90 albums.

Multitrack recording surgically dissects the recording into its component parts.

RH: Before we talk about your recording philosophy, tell me about multitrack recording and how most studio records are made today.

JW: Multitrack recording surgically dissects the recording into its component parts. First, the rhythm section—drums, bass, guitar, some keyboards—come into the studio and put down what’s called the “tracks”—the rhythm tracks or essential rhythmic elements for the song. Then, in the overdub stage, certain additions are made in a layering method by adding more guitar parts, more keyboards, more drum parts, background vocals—things that fill out the original arrangements are added one at a time in layers. This aspect of the recording process involves the lead vocalist, who comes into the studio by herself, puts on headphones, and tries to get excited and create a believable performance. Then the whole thing has to be mixed, which can take months.

Because of the technology the studio has to offer, we’re often seduced by it, feeling that if we separate and microscopically analyze each and every instrument, we can make each and every instrument perfect so that the sum total will be perfect. Unfortunately, only part of that is true. We get a perfect recording, but technical perfection is the worst. It offers you no heart, no soul. It offers you sterility.

I was made increasingly aware of multitrack’s propensity for sterility back in my session-musician days (I played bass guitar). The drummer and I would work with a guide guitar or piano and vocal, laying down a rhythm track that had the best feel we could come up with. Guitars, keyboards, voices, occasionally an orchestra, would all then be successively overdubbed onto our basic rhythm track, and with each overdub, a little of the tension, a drop of the excitement we had created, would be lost. Sometimes, even, the drummer and I would have to redo our parts because the whole thing had moved away from our original vision of how it should feel. The finished result was virtually always the same—technically perfect but bland, safe, and a pale shadow of what the songwriter had originally conceived.

—JA
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"...my initial listening confirmed that the SL260 offers generous bass power for a compact loudspeaker. Orchestral works had a gratifying sense of power and body, which combined with the Signet's fine dynamics to give large-scale music real impact.

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Kent Bransford
HIFI Heretic, Issue 14, Spring, 1991

"The result was striking... a real soundstage."

"The result was striking. "This is wonderful," my listening notes read – "a real soundstage."

The sound produced by the Signets on this piece (Otello, Karajan and the Vienna Philharmonic) defied their size and price. The [SL280] Signets were (and are) remarkably satisfying on a wide range of music, from the most intimate to the most bombastic."

Thomas J. Norton
Sterophile, Vol 13, No 10, October, 1990

"...great ambience and imaging."

"How do they sound? Holy golden ears – they're swell!

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Gregory Koster
The Sensible Sound, Issue 43, Summer, 1991

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If I can get the musicians to do what they’ve been doing their entire lives—play—in a controlled environment, live with other musicians, I find that the adrenaline surge, the excitement, the dynamics, the reason for making music comes into the picture again and we have some magical moments. Moments we couldn’t duplicate with a multitrack recording.

So in making those types of records, you find out that everything sounds right, but it feels wrong. It’s an unusual dichotomy—that the music can be so right yet feel so wrong.

That’s the way most recordings are done. It can even get so exotic as to have a drummer come in and physically lay in one part—one snare drum part with no kick drum, no toms, no hi-hat, no cymbals. After he’s put down the snare, he’ll then put down the hi-hat, and then each other drum. If you can imagine doing that over and over for each song you can see why most records take tremendous amounts of time. This is how normal records are done.

RH: How do you prefer to make records?
JW: If I can get the musicians to do what they’ve been doing their entire lives—play—in a controlled environment, live with other musicians, I find that the adrenaline surge, the excitement, the dynamics, the reason for making music comes into the picture again and we have some magical moments. Moments we couldn’t duplicate with a multitrack recording.

There’s a certain level of excitement that every musician has when he sees his friends—who are also at the peak of their professions—playing along with him. Nobody wants to be the one to make a mistake, yet everyone wants to have fun and take chances. Consequently, in recording the music live to 2-track or live to multitrack, we preserve the energy of a live performance and we record the project in far less time. The expenses obviously are far less and we can go to the finest facilities in the world because our time in the studio is not that extensive.

Performance is perfection, not technology or technique. I’m looking for the hair on my arms to stand on end. That’s what it’s all about.

When you see a live performance, you’re generally caught up in the magic of the moment—the use of body language, the facial expressions, the crowd, the excitement—there’s a certain emotion that occurs that we don’t have just by listening to a disc. The whole object of doing things live is to capture the emotional impact of a live performance and put it on tape.

The best way to ensure a believable performance is to lay yourself on the line, take a chance, and perform. Performance is perfection, not technology or technique. I don’t care if you sing a note sharp or flat—I’m looking for believability. I’m looking for the hair on my arms to stand on end. I’m looking for a performance that I can’t even believe this person made after hearing them sing the same song 20 times. That’s what it’s all about.
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RH: Does audio technology interfere with the music’s ability to make the hair on your arms stand on end?

JW: I think technology, if it is evaluated in the right perspective as a tool, an aid in the storage of an emotional performance, is fine. But if we get caught up in digital technology, or the latest digital reverb, we lose sight of the fact that all these things are just memory extenders. Their only purpose is to capture the performance of the players and singers as accurately as possible. Which also means as invisibly as possible because you don’t want any piece of equipment, any microphone, cable, console, or internal component to have a sound or characteristic that would detract from the music. There are certain things we use to tailor a specific sound to capture the realism of a performance, but technology is a tool, nothing more. It should serve in the capturing of a performance. The less the better.

**Sound quality does matter. It’s fantastic when you realize what can be preserved.**

RH: What are the sonic advantages of going live to 2-track?

JW: The most obvious sonic advantage is that you don’t get the generation loss that happens every time you step down to tape—analog or digital. The whole concept of live recording is to keep the noise threshold at its very minimum and the sonics as clean and vibrant as possible. It’s the decrease of the noise and the increase and purity of the signal that are the primary reasons—technologically speaking—for going live to 2-track.

Many people will argue that going from one digital [generation] to another is identical because you’re just transferring numbers. That’s not true. There’s a definite change, and it’s not subtle. It’s something we live with, just like the increase in the noise floor going from analog multitrack to analog 2-track.

RH: Besides skipping a tape generation, the signal goes through half the amount of electronics because it doesn’t have to pass through the console a second time during mixdown.²

JW: That’s right. Many times we’ll avoid the console completely and go directly to the tape machine. If we don’t want to add echo to the voice or special effects, the microphone goes right to the tape machine so we don’t have to go through the console’s electronics—the transformers, the VCAs, whatever. That’s important.

RH: Very few people in the recording industry are audiophiles or even feel the need to have a simple signal path. Why is that?

JW: I don’t think they’ve been exposed to what their own music can offer them. If you’ve been hearing a certain way and all of a sudden someone says, “Why don’t you listen to it this way?,” most of the people discover parts of their own music that they never knew were there. It’s an educational process. Many times the excuse is, “It doesn’t matter because the people who buy our records listen to boomboxes and things with heavily distorted sound, so what does it matter?”

It does matter. It’s like a flower that has so many more petals and blooms, and has a fuller dimension, so many more characteristics and hues. It’s fantastic when you realize what can be preserved.

RH: Given the musical, sonic, and financial advantages of live to 2-track recording you’ve talked about, why isn’t the technique more widely used?

---

² Recording consoles typically have dozens of op-amps in the signal path (usually 5534s), not to mention transformers, Voltage Controlled Amplifiers (VCAs, ugh), cheap capacitors, switches, carbon resistors, pots, yards of pcb traces, edge connectors, and other electronics. Now multiply all that by the number of input channels for an idea of what the final output signal has been subjected to.

—RH
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JW: Fear. The fear of putting yourself on the line is a great demotivator. If you're not a performer or if you count on the studio to make you a player, you're in essence lying to yourself about yourself. My philosophy is, if you're a player, play. If you make a mistake, play it again.

There's nothing wrong with mistakes. It happens on even the most sophisticated product. If the tempo lags a little or speeds up a little, maybe the tune was meant to go that way. Maybe it felt emotionally better to go a little bit faster. But a lot of times performers feel inhibited. They feel threatened by the fact that they may make a mistake, and they start thinking about the music note by note. They lose sight of the emotional impact of the song and the believability of the product they're trying to create.

**Once the musicians get over the fear of playing.**

We put the musicians in a zone of comfort and indicate to them that what they're trying to express will be brought that much more to the forefront if they let loose. There's no need to worry about making mistakes; if it's a three- or four- or five-minute song, I'm sure you can spend three or four or five minutes doing it again. Once we introduce people to the whole thing, some find it's a relief, that it's a fantastic way to go. Others are simply inhibited.

There are, however, certain compositional aspects to consider. If you're working with a keyboard player who wants to create a certain level of color by using various keyboard sounds, they can't physically do it live to 2-track. If the artist is a guitarist and wants to play all the parts himself, obviously he can't do it with live to 2-track recording.

But my philosophy is, if you have two guitar parts, get two guitar players. Let one play the rhythm section, let the other play the solos—whatever. Three keyboard parts? Get three keyboard players. It's much more exciting to have more players in the room. I really believe that, once they get over the fear, the party begins.

RH: I know you use a lot of tube microphones. Do you think tube electronics are inherently better at capturing the sound of an instrument?

JW: I think that a microphone—tube, solid-state, whatever—has to be matched to the instrument or vocal; the sound of the microphone can be used to enhance or capture whatever we're going for. I think tube microphones are generally better, but in what configuration? I always try to match the vocal or the piano with a specific microphone whose characteristics won't detract from, or be totally neutral to, the instrument or vocal. By and large, I love tube microphones, but I won't use them on everything. Sometimes the studios don't have them because they're rare, and often times you find certain things lacking in tube microphones that you can get in other types of microphones. But by and large, they're fantastic, and I use them whenever I can.

RH: A great vocal sound on one of your records that I know was done with a tube mike was Diane Reeves on David Benoit's This Side Up.

JW: Yeah! She's got that pure, piercing tone, and if you used a microphone that had a brittle upper register, you would detract from her voice. But a tube microphone might have a tendency to enrich the quality of her voice and give a certain level of fullness. Diane's voice is so great. But not having worked with her before, I basically decided that I'd go out with the heavy guns and see if it worked. It worked great, and we felt great about it.

RH: That track is a good example of what you said earlier about "believing" the performer.

JW: We did the whole thing live to 2-track; she came in, sang it, and boom—goodbye. I think we did maybe two takes and it was gone—over. That record
TO REVEAL SOMETHING HIDDEN.

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was done in two days, and it was a blast. I still think—and David and I both agree—that that record is probably his finest. There are many reasons for that. One is that we had no commercial restraints that particular time; David was an emerging artist and didn’t have the pressure of having to deliver a high-profile product to a high-profile label. Ultimately, that’s what we


**The Usual Suspects**

Jeff’s latest project, and one of which he is particularly proud and enthusiastic, is *The Usual Suspects*, released by Sheffield Lab. *Suspects* is something of a homecoming for Jeff; he got his inspiration to be in the music business from listening to Sheffield Lab records 15 years ago. Making *The Usual Suspects* “was like a dream come true” for Jeff, not only because it reunited him with Sheffield Lab, but also because of the incredible lineup of musicians he assembled for the project.

In the tradition of Sheffield Lab’s *Distinguished Colleagues*, Jeff brought together the best players and writers, asking six of them to compose new music for the ten-track collection of mostly instrumentals. Indeed, the lineup reads like a *Who’s Who* of L.A. session musicians—with the addition of the 31-voice L.A. Mass Choir on two tracks. Reflecting this wealth and diversity of talent, *Suspects* spans a broad musical spectrum, with pop, rock, soul, and jazz elements. Jeff wanted “an urban-tinged jazz session with some vocals, without strict restraints as to style or category.”

*Suspects* exemplifies everything Jeff talked about in the interview. The feeling of musicians playing together and having fun is palpable. In addition, the record is stunning sonically, with transparency, three-dimensionality, and a remarkable sense of life. The CD master was made from the original ½” 30ips analog master. According to Jeff, “The analog best represented what we were trying to do.”

Jeff summed up what makes *Suspects* special: “This record represents a lot of people taking chances at the same time. We went for that musical magic, never playing it safe, and captured the honesty and emotion of the performers.”

Check out *The Usual Suspects*. You won’t be disappointed. —RH

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1 For a second opinion, check out GL’s full review in this issue. —JA
wanted for him—and that’s where he is now. But that particular time we wanted to have some serious fun and try something unique for David, which was recording live to 2-track.

RH: You roll both analog and digital 2-track machines when you record. What makes you chose one format over the other for release?

JW: On the record I did with Toni Tennille and full orchestra [More Than You Know], we realized that to best serve the music the analog was better. We had it all on digital, but it just didn't serve the purposes; it was too precise, too accurate. There was something that seemed too good. It didn't have the subtleties that we felt the music demanded.

As I make the journey from analog to digital and back and forth, I try to keep the more humanistic things on analog. For vocals and other things that have difficulties with digital—horns and strings—I like analog.

RH: Tell me about the mechanics of a live to 2-track session.

JW: We prepare heavily beforehand. We've evaluated the music, we've had the charts made, and we'll have a rehearsal or two to make sure everyone is familiar with the music. Then when we walk into the studio, we use as much isolation as possible to have as much control as possible; in that sense it's like a normal recording. We've established a microphone selection and setup long before, and we've actually made our choice of studio based on how many people will be in the session.

The control room is basically in the same configuration that it would normally be. I sit behind the engineer because I'm mixing aurally as we're going down. To my left is usually a score supervisor who tells me the music two or three bars ahead of time. So I'm sitting behind and constantly talking to the engineer to correct the balance and maneuver the faders to correspond to what I'm hearing. When a certain solo comes in, or when a vocal comes in after a chorus, or where there's going to be a solo section for the horns, the score supervisor is talking to me in one ear—"Trumpets coming up in two bars... 4, 3, 2..." During this time I'm telling the engineer to be prepared for trumpets. We have preset levels on the faders; everything has already been preset during the run-throughs we do before each recording. Each song goes down like that.

It's a very high-pressure, emotional moment. The more players we have, the more intense it becomes, as you can well imagine. Then we evaluate the performance. Sometimes I don't have my act together right away, or some things aren't in the right perspective, or certain sounds that I originally thought sounded good need a little more maneuvering. We determine whether my side of the glass is working as well as the performance side. Could we do that performance better? What does the artist need to capitalize on in his performance of the song?

We do a rundown, evaluate it, then do two or three takes in a row. We come in, listen to them, pick one, and move on to the next one. We don't dwell. There's a level of performance, a level of emotion that starts off right. If the level of performance drops, so does the level of emotion. We want to capture the song while it's fresh, while it's unique. We don't want to say, "Hey, you've got to play this way," because all that does is take the performance and focus it on specific parts of the song, when I need the whole spectrum of the song performed. Yes, I need each individual part to be played as well as possible, but I don't want the focus to be such that individual notes are stressed at the expense of feeling.

RH: That's the drawback of multitrack recording. You have a guitar player who's finished solo number 20 and he's about to do number 21 and isn't up for it because he thinks this isn't the one that's going to be on the record because the 20 before it aren't going to be on the record.
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JW: Or he'll say, “Look, you’ve got 20 different solos. You’ve got the beginning of my solo on track 2, the middle section was great on track 18, now just let me get the end.” Those type of prefabricated solos are commonly done, and I guess they have their place in recording—it’s just not something that I enjoy personally.

My feeling is, play. Go for it. Have fun with it. Believe in yourself, and make me believe you. Because what more than likely happens is that no solo is ever perfect. If you do manage to make a composite out of a solo, the odds of you playing something even closely resembling that same solo live are impossible. You want to have a human solo and you want to make it so the solo becomes magic, not prefabricated.

RH: To play devil’s advocate, aren’t there some projects you just can’t do live to 2-track?

JW: No. If it becomes too much for one person, then I separate it into specialists. I’ll hire a guy who specializes in strings, and a guy I know is rock solid on the rhythm, and a guy who has done plenty of vocal records.

Each will be responsible for only his section. Sure, there are probably lots of records that can’t be done live to 2-track. But in my mind—probably more in my heart—anthing can be done live to 2-track.

RH: So you think more records could be done live to 2-track?

JW: Absolutely. They may not be as perfect, and they may not have all the production elements that ultimately are on many records. There’s a certain tradeoff—many times people will say, “Gee, it’s a little rough around the edges, but man, it really speaks to me.”

I look for that. I try to get it sophisticated because I want my records to stand up in the marketplace. I don’t want them to say, “Yeah, it’s live, but it’s so thin and underproduced.” Many of my friends don’t take as many chances going live to 2-track because they’ll have either a jazz quartet or a string quartet where the demands aren’t as exceptional as when you have a complete rhythm section, two percussionists, three keyboard players, and a whole horn section, not to mention 21 strings. To me, that’s what the whole musical challenge is all about. That’s where you get your excitement.

RH: It shouldn’t be too much to ask musicians to play together for four or five minutes—however long the song is.

JW: As a matter of fact, you’d be surprised at how many musicians, especially in Los Angeles, love playing together because they never get to do that anymore. They’re either doing television cues that are 10, 20, 30, 60 seconds or they’re doing records where they’re asked to only come in and play their part and leave. By and large, the idea of playing together is a throwback to the days before they seriously went into the record business and they used to play in bands in clubs, with garage bands, and parties, and have a good time together. Some of the players I use right now make much more money on comparable record dates where they just overdub their part. But they have so much more fun here.

RH: It’s a musical event rather than just showing up for another day in the studio.

JW: That’s right! I like to tell my clients, “Anybody can make a record. Let’s make an event. Let’s have people talking about it before we make the record.”

I did a record with David Lasley, a great singer/songwriter who wrote “You Bring Me Joy” for Anita Baker, and has one of the singles on the new Whitney Houston album. We had a fantastic array of background vocalists who were stars in their own right—Rita Coolidge, Luther Vandross. We used great players like Abe Laboriel on bass, Jeff Porcaro on drums, Louis Conte—a real Who’s Who. We did the whole thing—remember, there’s complete strings, complete rhythm, ten background vocalists—all live to 2-
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track, and it was quite an event. We did the whole album in three evenings. *That's what it's all about.*

So when I see things like Anita Baker putting in her latest record, “live vocal,” I have to chuckle because to me that means, my gosh, she’s *singing with her band.* What a concept! [laughs] Something I’ve been doing for the last dozen years and it’s something she’s just discovered. [laughs]

**RH:** *Do you ever listen back to your records and wish you could remix them but can’t because they’re on 2-track?*

**JW:** We always listen back to each thing that we do, because if I made a mistake, we have to do it again. I’m just like a player; if I screw up in my discussions with the engineer, or he doesn’t understand what I want, or the musicians aren’t happy with the performance, we end up doing it again. Sometimes we say, “That was so terrible, but it *felt* so good we’re going to let it slide.” A lot of musical mistakes happen that way. So yes, we listen back but we can’t change it. Sometimes we wish we could, but by and large we go into the recording with the understanding that this is it. I don’t want to get in the way of my own records. When they’re done, live to 2-track, I can’t think about them, futz with them, ruin them. We love it for that and we hate it for that. But that’s what it’s all about.

**RH:** *Contrast how you feel at the end of a project—two or three days in the studio—with someone producing a multitrack record who’s just spent six months or a year on a record.*

**JW:** You’ve got to understand that I record both ways. Live to 2-track is an option I offer my clients based on excitement and finances. But I do multitrack recordings; it’s a completely different mindset. On a multitrack recording you’re putting together the pieces of a puzzle a little bit at a time, and getting up for that on a daily basis takes a lot of work. The thought of getting up and spending the next eight hours doing keyboard overdubs is not always attractive. Let’s face it—I don’t always look forward to it. If I’ve been doing it for three or five days in a row, gee, *it’s not fun.*

The tension and fear in every live to 2-track record that I do is that I’ve only got *x* amount of money and *y* amount of time. Can the record be performed to my and the artist’s level of satisfaction in that time? But that comfortable tension is offset by preparation and by having the greatest players and singers in the world performing and having a great time. Sometimes you *don’t* have a great time. Sometimes you’re intimidated. But by and large, it’s a thrill.

**RH:** *That tension is like an athlete’s at the Olympics. They raise their level of performance because they know this is it—this is what’s going on the record.*

**JW:** It’s the ultimate expression of who they are. It’s like a live gig. But on a multitrack session, there’s no pressure. There’s no tension. So we made a mistake. We’ll come back tomorrow or the day after. It’s an assemblage of component parts. It’s only a question of money at this point.

But with a multitrack recording it’s a different type of satisfaction, a satisfaction that we’ve finished the record after all that time. There’s a certain part of that musical excitement if someone really does rip off a good solo after 20 takes. There are little peaks, and when the project finally comes together and is tailored and all the little different things, well, that’s exciting too.

But it’s not the same. *It’s not the same!* Because you can’t share that excitement with everybody together. You can only share the excitement with one or two or five people on a multitrack session. The rhythm section is great, but you can only share the excitement with the rhythm section. But on a live date, *everybody*’s together and *everybody* knows it’s fantastic. What a sense of *achievement* and what a sense of *excitement!* There’s nothing like it.
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Coda Technologies
FET-01 Preamp Amplifier

Robert Deutsch

Coda Technologies FET-01 preamplifier

Frequency response: DC-200kHz, -3dB; RIAA equalization +0.2dB with subsonic rolloff at 14Hz. Distortion: line stage less than 0.01% from 10Hz-40kHz into 600 ohms or higher, shunted by 1000pF or less, at 6V peak output; phono stage less than 0.01% from 10Hz to 40kHz at 3V peak output. Gain: phono stage 37dB (Low) at 1kHz, 57dB (High) at 1kHz; line stage 14dB (unbalanced), 20dB (balanced). Noise: line stage -100dBA referenced to IV output, phono stage -85dBA referenced to IV output. Input impedance: line stage 20k ohms, phono stage selectable 22, 100, 1k, or 47k ohms in parallel with 50pF, 100pF, 200pF, or 1000pF. Output impedance: 75 ohms (unbalanced), 150 ohms (balanced). Crosstalk: -70dB at 20kHz (line and phono stages). Maximum output: 26V p-p. Absolute polarity: correct for all inputs. Dimensions: 19" W by 2.35" H by 9.75" D. Weight: 8 lbs. Serial number of unit tested: A901029. Price: $2500. Approximate number of US dealers: 25. Manufacturer: Coda Technologies, Inc., 9233 Wausau Way, Sacramento, CA 95826. Tel./Fax: (916) 366-6420.

The audiophile who isn’t compulsive about reading the Audio Directory Issue cover to cover would be forgiven for not having heard of Coda Technologies. I happened to know about this company because their products’ first public showing was at the 1990 Toronto CE-EX, which I reported on for Stereophile in Vol. 14 No. 1. The Coda electronics (FET-01 preamp and System 100 amp) were making very nice sounds there with the Unity Audio Signature speakers and Micromega CD front end. Brian Parenteau of Interlinear (the importer) told me that Coda Technologies was founded by four former employees of Threshold Corp., a fact that seemed to go some way to explain the marked physical resemblance between Coda and Threshold products. (The Coda FET-01 looks much like a Threshold FET nine/e, with the same sort of low-profile enclosure.)

I understand that they came up with the name of the company (coda = a final or concluding portion of a musical or dramatic work) by searching through the New Grove Dictionary of Music and Musicians, having discovered in the Audio Directory Issue that Counterpoint, Symphonic, Major, Minor, Sonata, Ensemble, Metronome, etc. had already been taken by other companies. (Just kidding, guys!) Coda’s products include, in addition to the FET-01, the line-stage version FET-01L ($2200) and the entry-level FET-02 ($1650, again line-stage-only), as well as the System 100 ($6000) and Model 10 ($2250) power amps.

System and Setup
The audio system in which the Coda FET-01 was evaluated remains much the same as in my Vol. 14 No. 12 review of the Conrad-
Johnson PV11 and Threshold FET nine/e (but see sidebar on dedicated AC lines). A Lingo’d Linn LP12, Itoik, and AudioQuest AQ 7000 comprise the analog front end, AudioQuest’s Competition Z cable having replaced the original Linn tonearm cable (yes, it’s sonically superior to the Linn cable and still compatible with the LP12’s delicate suspension). Digital source is a modified Philips CD650 used as a CD transport, feeding an Aragon D2A updated to Mk.II status (a good product made better). Speakers are original Quad ESLs and Cizek MG-27 subs driven by the trusty Luxman MQ 68C (Quads) and Bryston 3B (Cizeks) via a Dahlquist LP-1 crossover. A Muse 100 amp was substituted for the Luxman in some of the comparisons.

The electronics are plugged into a Tice Power Block; AC plugs are oriented for minimum chassis voltage. (Although the listening room’s AC receptacles are wired in the conventional orientation, the Coda FET-01 had lower chassis voltage—and sounded better—with the plug reversed.) In making comparisons with the polarity-inverting Conrad-Johnson PV11, absolute polarity was maintained by switching speaker-cable connections or by using the polarity-inversion feature of the Aragon D2A. Speaker cable is van den Hul 352, interconnects include vdH D-102 Mk.III, masTER LINK Black, and AudioQuest Lapis. A Stax Lambda Signature headset, driven by the SRM-T1 tube-hybrid headphone amp, serves as an additional reference.

The Coda FET-01 was subjected to listening tests over a two-month period, with the review samples of the Conrad-Johnson PV11 and the Audio Research SP9 Mk.II on hand for comparison. I didn’t have access to a power amp with balanced inputs, and was thus unable to determine the effect of balanced vs unbalanced connections, but I would assume that the results with balanced connections would be comparable or better, if only because of the superior contact allowed by XLR connectors.

DESCRIPTION & SOME TECHNICAL STUFF

The FET-01 is a slim, exceptionally attractive unit, with a chassis made of machined

ANOTHER PAEAN TO

Although my audio system remains relatively unchanged from the time of my last equipment report, the electrical service supplying power to the system has recently undergone a major change. I was well into my listening tests of the Coda FET-1 when I read JA’s enthusiastic endorsement of the benefits of dedicated AC lines (Vol. 14 No.9). This pushed me over the edge (no cracks, please!) to do something I’ve thought of doing before: I called an electrician and arranged for a service upgrade and the installation of two dedicated AC lines, complete with hospital-grade receptacles and isolated grounds. With the original line/receptacles still available for use, my plan was to briefly listen to the effect of the dedicated lines, then plug the system back into the old, non-dedicated line, so that the continued listening tests would be comparable to the previous observations.

I plugged the Tice Power Block feeding the audio electronics into one of the new lines, the Quads into the other, then turned on the system, put on a CD I’d just listened to, and... Holy Power Supply, what a difference! Deeper bass, freer dynamics, less background noise—not just different, but better sound! The sound also appeared to be louder, even though I hadn’t touched the volume control. (I wanted to measure sound pressure levels to check for an objective correlate of the subjective loudness enhancement, but could not get hold of a peak-holding sound pressure level meter with sufficient resolution. There was no difference using steady-state signals.) I made a brave effort to continue the formal listening tests with the system plugged into the old line, but it was a case of ‘How’re you gonna keep ‘em down on the farm...’ I decided instead to repeat the listening comparisons in the context of my newly improved audio system. For your information, the cost of the extra lines was about $500; a bit more than JA’s $373.45, but this is Canada, eh?

—Robert Deutsch

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aluminum, finished in anodized (rather than painted) black. It offers more features than minimalist designs: there are six inputs (including phono with switchable gain and various impedance/capacitance options), outputs for two tape recorders (with class-A FET follower buffers, thus eliminating untoward interactions with tape-recorder input stages), mode and balance controls, and balanced (switchable US/European phasing) XLR as well as unbalanced RCA jacks.

The FET-01’s circuitry is the result of an advanced and complete design process combining innovation and proven fundamentals. At least, that’s what it says on the blurb sheet. (When was the last time you heard a company boast of having an incomplete design process lacking in innovation and abandoning fundamentals?) The FET-01 does seem to have all the right stuff: dual FETs in differential configuration, a shielded toroidal transformer with lots of current capacity, separate heavily filtered power supplies for each gain stage, no global feedback, fiberglass epoxy circuit boards with gold plating over a tin/nickel layer, 1%-tolerance metal–film resistors, only film capacitors used in the signal path (large electrolytics are used in the power supply), gold-plated connectors, etc. Fit and finish are exemplary. But what about the sound?

LISTENING
Following just a few hours’ system warmup, and using CD sources, the Coda FET-01 impressed me with its smooth, fundamentally neutral, non-fatiguing presentation of sound. The sound continued to improve as the unit “burned in” during the review period, becoming more open and acquiring more delicacy at the top end.1 (It has no on/off switch, and consumes a mere 14W; only the most conservation-oriented audiophiles would think of pulling its plug.) Conspicuous by its absence was the touch of hardness—exaggerating digital and other recording nasties—that for me marred the performance of the otherwise admirable Threshold FET nine/e. (I noted this difference between the sounds of the Coda and the Threshold before my new AC lines were installed—see sidebar; thus, though the two units were not available for side-by-side comparisons, the observations are otherwise comparable.)

The Coda’s sonic personality2 may be described as cool, calm, and collected (I can’t get away from those “c”-words), rather than exuberant, ebullient, or extraverted. “All-rounder” is another way of describing the Coda’s attributes: tonal balance that doesn’t place particular emphasis on any part of the spectrum, lots of detail, a good sense of soundstage width and depth when the recording contains this information, convincing focus on voices and solo instruments, and effective communication of dynamics. Over time, I became aware of a slight “electronic” haze in the treble and upper midrange, but it was low enough in magnitude that only a curmudgeon would complain about it. (But then, this is Stereophile, otherwise known as Curmudgeons’ RUs.)

In the initial listening sessions—ie, BDL (Before Dedicated Lines)—there seemed to be a degree of blandness in the presentation, so that something like the “Battle Music” on Bernstein’s new recording of Candide (DG 429 734-2, disc 1, track 9), which is almost scary in its impact when heard through the C-J PV11, came across as just a bit subdued with the Coda in the system. (Levels were matched for this comparison.) ADL (After Dedicated Lines), however, it was a different story: most of what seemed like blandness in the Coda was gone, replaced by a chameleon-like (or Zelig-like) variability as a function of the recording itself. The battle between the Westphalians and Bulgars now had much the same startling quality that characterized the sound with the PV11. Bob Silverman’s opening chords on the Stereophile Brahms piano CD (Intermezzo, Stereophile STPH003-2) rang out with an intensity and presence that suggested the real thing.

Comparisons with the PV11 and the SP9 Mk.II showed the Coda to be superior in two specific areas: bass extension/control and

1 One of the universal principles of life and the nature of reality is that it takes longer than you think. This principle applies to everything; how long it takes to pack for a holiday, mow the lawn, find a new job, and the time it takes for an audio component to reach its optimum performance after turn-on.

2 Although the term “sonic signature” is more popular (and certainly more alliterative), I prefer “sonic personality.” Graphologists’ claims to the contrary, a person’s signature doesn’t tell us much about consistencies in the person’s behavior in various situations, nor does it act as a basis for specifying personality/situation interactions or for making meaningful comparisons between people. Next class, we’ll discuss the major theories of personality. (Sorry, I somehow got switched into the “Psychology Professor” mode. It can happen when least expected.)
soundstage width. The PV11's bass is quite extended, but on the warm side of neutral (a little too much so in combination with the Luxman tube amp), and the SP9 Mk.II is totally rather lightweight. The Coda seemed to go even deeper than the PV11, and the bass was tighter, so that bass drum and tympani transients (eg. The All Star Percussion Ensemble, MCD 10007) had more snap.

I had no real complaints about soundstage width as rendered by PV11 or the SP9 Mk.II, but the Coda was just a bit better. The "off-stage" voice at the end of Anna Maria Stanczyk's Chopin piece on the Stereophile Test CD (exclaiming "Well Done!") was clearly offstage with all three preamps, but with the Coda it was virtually outside the stage door. Similarly, the lateral positioning of instruments and voices within the soundstage was exceptionally precise, making it easy to point to exactly where each of The Plaids is standing in Forever Plaid (RCA 60702-2-R). Also, the Coda's highs were subjectively more extended than the PV11's, and managed this feat without becoming bright or hard. (The SP9 Mk.II was brighter than either, somehow still avoiding the hardness trap.) Where the PV11 was still ahead, however, was in its ability to communicate the rounded, produced-by-a-human-being quality of voices, as well as in its more plausible portrayal of soundstage depth and ambience, even though, paradoxically, minute details were not as clear as with the Coda.

Substituting the Muse 100 for the Luxman tube amp brought about changes that were pretty much in line with these amps' distinctive personalities: midbass became tighter, highs more predominant and not quite as sweet, and soundstage depth was somewhat curtailed. Coda's $6000 System 100 class-A amp would probably provide a better sonic match with their preamp than the Muse 100, but this fairly modestly priced ($1200) amp did not really let its end down, the combination producing, with the right sources, a lively, musical sound blessedly free of the brittle quality that screams "solid-state." The PV11/Muse 100 combo provided what, for me, was an even better amalgam of tube (smoothness, liquidity) and solid-state (crispness, control) virtues, but those who've thrown in their lot with solid-state (known to tubeophiles as The Evil Empire) will probably ascribe my preferences to my ears having been bent out of shape by years of listening to vacuum-tube colorations. As in all of audio, you pay your money and you takes your choice.

At the 1991 Stereophile Writers' Conference, JA asked the assembled scribes to indicate by a show of hands whether they still used LPs more than CDs for "serious listening." About half of those attending put themselves in the LP camp. I was not among them. Although explicit comparisons I've made between LP and CD versions of the same recording have usually favored the LP, the fact is that almost all new recordings are released only on CD. This is especially true for recordings I get for review, so for me to admit that I do my "serious listening" to LPs rather than CDs would be to admit that my record reviews are not based on "serious listening"—an admission that would likely cause RL to raise at least one eyebrow. As a simple statistical fact, I do listen to CDs more than LPs, but that's not to say that I would ever give up listening to my LP collection, or that I would not want the phono section of a preamp to extract every bit of music from those vinyl grooves.

Which brings us (in a somewhat long-winded way) to the discussion of the Coda's phono stage. The first thing to note is that it does handle low-output moving-coils, though the noise level with the AQ 7000 is higher than I would have liked. (The SP9 Mk.II is quieter; the Threshold FET nine, from what I recall, was a little noisier; the PV11 needs a step-up to work with a low-output moving-coil.) In its overall sonic quality, the Coda's phono section was an excellent match for the preamp's fine line stage. It had no trouble revealing that the original LP set of the Sutherland/Pavarotti Turandot (London OSA 13108) is superior to the CD version (414 274-2), or that the same is true of the Robert Silverman Brahms LP/CD comparison. (Maybe LPs should be my primary medium for "serious listening.")

In a fit of audiophile nostalgia, I dug out the M&K Roger Wagner Chorale Direct-to-Disc Encore, you know, the one with somebody exclaiming, "If you step on the microphone, you'll kill it!" after a chorus member apparently kicks one of the PZM mikes. The

3 I suspect that the output level of my sample of the AQ 7000 (a superb-sounding cartridge) is somewhat below its claimed 0.3mV specification. (My previous cartridge, a Talisman S, was specified as having 0.26mV output, but I didn't have to turn up the preamp gain as much to achieve the same sound level.)
bass transient that resulted from the assault on the aforesaid PZM was deeper and tighter than I’ve ever heard in my system; it was clear that the Coda line stage’s way with the bottom end was not compromised by the phono section. The same passage, played through the PV11 (with Bryston TF-1 step-up) came across as looser in the bass. The PV11/TF-1 combo had a generally warmer sound, with not quite as much detail as the Coda, but voices, once again, sounded a bit more real.

The last set of comparisons involved my version of the bypass test, intended to assess the changes effected by the line stage. This is done by a) feeding the signal from the output of the Aragon D2A to one of the line-level inputs of the PV11, b) taking the signal from the PV11’s tape-out jacks to the input of the Stax CRM-T1 headphone amplifier, and c) comparing the sound of the Lambda Signature/CRM-T1 featuring this relatively direct connection (the PV11 merely acting as a convenient input/output buss with no active circuitry in the signal path) to the sound produced when the signal feeding the CRM-T1 is taken from the main output (set for unity gain) of the preamp under consideration. This should be a very sensitive test: the Lambda Signature/CRM-T1 combo, while somewhat tilted-up in tonal balance, has a transparency that is, in my experience, unequaled by any amplifier/speaker combination.

The FET-01 did well in this test, imposing little editorializing of its own. (No, Mr. Editor, I’m not implying that editorializing is necessarily a bad thing!) Tonal balance was virtually unaltered, with highs and lows present in just about the same proportion as in the case of the direct signal path, and with no apparent rolloff at top or bottom. There was a slight thickening/coarsening of sonic textures, as well as some loss of transparency, but the extent of these changes was relatively minor. As Bruno Bettelheim has noted, it’s impossible for an audio signal to go through a preamp’s line stage completely unscathed (he was talking about an individual’s passage through childhood, but the principle is the same); the changes effected by the FET-01 were relatively innocuous.

**TJN ON THE BENCH**

The measurements were performed on a second sample of the Coda. The balanced outputs of the first sample we received were unstable and oscillated at certain volume control settings. This was apparently due to a problem with the particular FETs used. All Bob Deutsch’s auditioning was performed on the second sample.

The line-level gain of the Coda measured 15.7dB unbalanced, 21.8dB balanced. Unity gain on the level control was reached at settings of approximately 12:30 unbalanced, 10:00 balanced. Output impedance, from the main outputs, measured within 1 ohm of 61 ohms, balanced output, for settings between maximum and 9:00 (except in the left channel, where it dropped slightly to 55.6 ohms at unity gain). The output impedance of the unbalanced output measured within 1 ohm of 134 ohms for the same range of settings, both channels. The output impedance of the tape outputs measured 1160 ohms, a rather high figure, for a source impedance of either 25 ohms or 600 ohms, indicating either an actively buffered output or one isolated via a series resistor. The input impedance of the line stage measured within 200 ohms of 24.6k ohms for level control settings from 9:00 up to unity gain, dropping to about 19.7k ohms at the maximum setting.

The 1% distortion point of the line stage was reached at an output of 20.92V at 1kHz (from an input of 1.708V with the volume control at maximum). The Coda was noninverting through its line stages at the unbalanced output. (A series of internal switches permits the user to switch the balanced outputs for either pin 2 positive or pin 3 positive—a welcome feature, considering the lack of standardization of high-end equipment in this area.) DC offset was a negligible 2.2mV in the left channel, 1.8mV in the right.

The phono gain, taken at the tape outputs (as were all of the phono measurements), was 60.6dB for moving-coil, 40.3dB for moving-magnet. With an unequilized input signal, the moving-magnet phono input overloaded (1% distortion) at 86mV in (8.79V out) at 1kHz, 4.88mV in (3.17V out) at 20Hz, and 837mV in (8.82V out) at 20kHz. The equivalent overload margins, referenced to a standard level of 5mV at 1kHz, are 24.7dB, 198dB, and 24.5dB, which is excellent performance. The corresponding figures for the moving-coil input were 8.7mV in (9.19V out) at 1kHz, 0.47mV in (3.15V out) at 20Hz, and 84mV in (9.18V out) at 20kHz (almost overload margins of 24.8dB, 19.5dB, and 24.5dB). The

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figures given are for the left channel; the right-channel readings were within 5% of these. Note that the reduced overload at low frequencies is a natural result of the RIAA equalization curve on LP recordings. The Coda’s phono stage was also non-inverting.

To obtain a reading of 2V from the Coda’s main unbalanced outputs (more than enough voltage to drive most amplifiers to full output) required an input of 0.3mV from the moving-coil input, 3.1mV from the moving-magnet, and 0.33V from the line. The corresponding figures for the balanced outputs were 0.15mV (MC), 1.6mV (MM), and 0.165V (line).

The flat curve in fig.1 shows the frequency response of the Coda’s line stage at the maximum setting of the level control, unbalanced output. At lower settings, left and right channels diverged by a maximum of 0.2dB, due to a very slight mistracking of the volume control. The unity gain setting also had a small rolloff above 20kHz—just over 0.2dB at 50kHz. The frequency response with a balanced output was identical—except for a smaller rolloff at 50kHz at the unity gain setting. The RIAA response for the phono stage is also shown in fig.1. While reasonably flat at higher frequencies, there is a pronounced rolloff below 100Hz, with the response down by 2dB at 30Hz. This may be a deliberate design characteristic; it will certainly act as an effective infrasonic filter for phono playback, but will render the sound of LPs rather lightweight in nature.

The crosstalk for the unbalanced line outputs is shown as the bottom curves in fig.2. The top curve of the two (referenced at the 20kHz point) is the crosstalk from right to left, the lower curve is the crosstalk from left to right. (Readings were made with a 300mV input to the driven channel for minimum THD + noise.) The crosstalk for the balanced outputs was virtually identical. The phono crosstalk (moving-magnet input), the upper curves in fig.2 (from right to left, top curve; left to right, bottom; both referenced at 10kHz) deteriorates at increasing frequencies. This deterioration, found in most preamps we have measured, is likely caused by capacitive coupling between the channels. The phono crosstalk measurements were made with an input of 25mV at 1kHz to minimize the contribution of noise.

The line THD + noise (again with a 300mV input) vs frequency is the bottom two traces in fig.3. Note that curves for both the balanced and unbalanced outputs are shown; there is no point in attempting to distinguish them, as they virtually overlap each other for both channels. A 25mV input was also used into the moving-magnet input for the THD + noise vs frequency, shown as the middle curve in fig.3. The upper curve is the THD + noise for the moving-coil input—with a 2.8mV signal at 1kHz.—Thomas J. Norton
RD CONCLUDES
Coda Technologies may not be as well-known as, say, Threshold, Conrad-Johnson, or Audio Research, but their FET-01 preamp compares quite favorably with competing products from these well-established companies, easily eclipsing, in my opinion, the similarly priced (and styled) Threshold FET nine/c. Both as a line-level and as a phono preamp, the Coda FET-01 proved a highly competent performer, providing clarity, detail, dynamics, and a neutral tonal balance, with an exceptional rendering of bass information and soundstage width. Although it didn't sound exactly tubelike, it was quite free of the hard/clinical quality that I associate with solid-state. In my book, the all-tube Conrad-Johnson PV11 is still the champ when it comes to the ability to communicate the real-live-person quality of voices, as well as in its portrayal of soundstage depth and ambience, but the FET-01 is not far behind in these areas. Most important, the Coda FET-01 has the sort of self-effacing sonic personality that draws little attention to itself, allowing the listener's attention to be absorbed by the music instead. That, after all, is what it's all about.

NELSON-REED 804-CM LOUDSPEAKER
J. Gordon Holt


What is this, Memory Lane? The first speaker system I got for review after my move last year to a new house was an updated version of the Sound-Lab A-3 that I first reviewed 5 years ago. The second (the 804-CM) is the latest version of another system I reviewed the same year (in Vol.11 No.4).

As longtime readers may have noticed, I don't look for the same things in reproduced sound that some of my Stereophile colleagues do. Yes, I value soundstaging and imaging, but not nearly as much as a lot of other things I won't reel off because I've listed them in almost every review I've done during the past few years, so you can just look them up and read them there. (If this is your first issue, congratulations!) I listen to enough live music these days to be able to generalize that it doesn't sound like what I hear from most high-end loudspeakers, which tend by comparison to be warmer, richer, and blander than real. The Nelson-Reeds aren't.

Associated equipment used for this review included the Proceed CD player, Revox A-77 15ips 2-track tape recorder, a Sony PCM-F1 digital recording system, Pioneer LD-S2 laserdisc player, Threshold FET-ten line controller, and Boulder 500AE amplifier. Audio interconnects were Monster M-1000s, and loudspeaker cables were AudioQuest Emeralds. Program material ran the gamut, although most of it was symphonic, from my own tapes and from CDs (mostly) by Delos, Mercury, and Sheffield.

In my first review of the 804s, I concluded that they are not an "audiophile's" speaker, because they are more forward and gutsy than the ones that garner most of the rave reviews. I then went on to add that, even with their rather rough high end, they sounded more to me like live music than your typical audiophile design. Well, it's no longer necessary to make any allowances for the 804's highs. The two dome drivers are so clean and smooth, and mesh so well, they seem no longer a part of the reproduced sound. They simply vanish, leaving a gorgeously clear (and alive) window on the recording.

Then there's the soundstaging. Although these speakers stand almost 4' high, their...
space that extends 'way out beyond the physical locations of the speakers. The only thing that seems unchanged, from the original 804s to these, is their dynamic range, which is still extraordinary. On wide-dynamic-range material, these speakers almost sound as if they have a built-in volume expander.

There is no boxiness on voice, and I detected no consistent midrange colorations, although I still think I should have, as both enclosures have some "active" panel areas that sound less than inert when tapped with the knuckles.

But if these sound so good, why am I not already starting to drool all over them in print? Because they don't sound all that good. The problem is bass. Not bass quality which is superb, but bass, period. It's thin. Pinched. Overly dry. Unappealing. And it took me weeks of trying this, that, and the other thing before I could admit that to myself.

You see, the first 804s I reviewed were, if anything, a bit bass-heavy. Even with a nice, tight amplifier driving them, and placement well away from the room boundaries, the bass balance was only just about right. Under more typical conditions, it was necessary to stuff foam plastic damping plugs (supplied by N-R) into the reflex ports, in order to control the heavy bass. That's part of the reason I was hesitant about declaring these latest 804s to be bass-shy; I just couldn't believe two versions of what is ostensibly the same speaker could be so different. The other part was that I was uncertain enough about my listening room that I was not yet prepared to state flatly that it wasn't causing the LF thinness.

These 804s are the first box speakers I've used since I moved into my current home a year and half ago. Since then I've lived very happily with a pair of Sound-Lab A-3s, which have never failed (to date) to produce beautifully balanced, smooth bass in any room I've had them in. I had no reason to assume there might be a problem with my present room, until I started using the Nelson-Reeds.

A brief, initial listen in the presence of designer Bill Reed, on the day these were delivered, prompted some comments about the sound being a little lean, but no one (out of four people present) seemed to feel there was anything amiss that couldn't be cured by a little creative box-moving. I assumed that what I was hearing was a simple case of new-cone syndrome, and that a day or so of break-
in was all that was needed. But that didn't help. After a week of sporadic listening, totaling perhaps 20 hours, I heard no hint of LF improvement. So I piped some pink noise into them, cranked the level up to around 70dB spl, and vacated the house for the rest of the day. Nothing doing: the bass was still thin, and no amount of pushing and shoving the speakers around in the room could change it.

Subsequent measurements suggested the room might in fact be the culprit. With the speakers symmetrically placed between the side walls, midbass output (at 45Hz) at the listening seat was almost 9dB below the 100Hz output. I obtained a copy of the "Listening Room" computer program for loudspeaker placement and set about plugging the necessary values into it: room dimensions, speaker placements, listening location, and woofer and ear heights above floor level. It told me that any laterally symmetrical speaker/listener placements in my 15' wide room would cause a response dip at 45Hz. (So much for the left/right symmetry that both I and Tom Norton recommended in our recent articles about listening rooms. This would seem to be a strong endorsement for satellite/woofer systems, where the former could be symmetrically placed for best imaging and soundstaging and the latter could be placed where they produced the smoothest bass.)

I went back to "Listening Room," and told it to move the speakers and listener to the right by a distance of ½ the room width. LR responded by advising that I should have no standing-wave suckouts between 40 and 60Hz, so I moved the speakers to the asymmetrical locations, slid across the sofa until I was midway between them, and took a re-listen. Ah yes, much better. Yet... they still sounded thin. I ran another curve, which seemed to contradict LR's predicted result by showing a 3dB dip at 45Hz. But that was only the half of it. The speakers still sounded as if the dip was at least 6dB deep, and the bass—what there was of it—was so tight and well-defined that I wondered if a major part of the problem might not be due to excess woofer damping.

Finally, in desperation, I went out and bought 100' of 12-gauge zip cord, cut it in half, and ran the pair into my 9' by 14' office. (The extra resistance of the cable should suitably relax the amplifier's grip on the speaker's low end.) There I set up the speakers about 2' from two adjacent corners, and replayed some of the previous program material. The thinness was still there. Okay, now I was getting somewhere!

Next, I trotted the 804s over to a fellow audiophile's house, where a pair of Nestorovic 5ASes had been making very nice bass noises in a room I estimate to be about 14' by 16'. Same thing. No bass from the 804s.

Actually, that isn't quite accurate. Below that midbass range, the 804s' maximum output was at a very respectable 30Hz, where the measured level was equal in amplitude to their 100Hz output. This was the case in every room I tried them in. So organ music was, occasionally, very impressive. The thinness was because the response dip (or apparent overdamping) was smack in the middle of the midbass range, which is where 90% of what we think of as "bass" occurs.

The supplied instructions are thorough and informative, except for one glaring omission: Nowhere do they contain that reassuring paragraph that starts, "If you need to contact us directly..." and ends with an address and phone number. If you buy a pair of these unboxed from your friendly local dealer, put this issue of Stereophile where you'll be able to find it if you need to get in touch with Nelson-Reed. (The information is at the top of this review, in case you didn't notice.)

So there it is. Through most of their range, the new Nelson-Reed 804-CMs are superb loudspeakers, surpassing in some ways (dynamics and efficiency) my beloved SoundLabs, but their bass problem is so severe and proved so intractable as to disqualify them from serious consideration. The Nelson-Reed people tell me they're working "fursiously" to track down the problem and correct it. I hope they succeed, because with decent low end I would consider giving these a high Class B recommendation.

JA ADDS SOME MEASUREMENTS As I was due to drive up to Denver with my daughter for the 1991 Grand Prix when JGH told me about the bass problem he was.

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1 Measured on a Neutrik 3201 Audiotracer, ½-octave warble tone, 100mm/s per speed.
2 $34.95 postpaid in the US, from Sitting Duck Software, P.O. Box 130, Veneta, OR 97487. Reviewed in Vol.13 No.12.
3 See Vol.13 No.4, April 1990, and Vol.14 No.10, October 1991, respectively.

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WorldRadioHistory
having with the Nelson-Reeds, I dragged along the MLSSA measurement setup to his Colorado home. My room measurements confirmed the presence of the midbass suck-out when the speakers were set up symmetrically, though they also showed that JGH’s room has a nicely controlled and even reverberant characteristic, ranging from 0.3s at 250Hz to 0.2s at 8kHz.

Fig.1 shows the spatially averaged in-room response from 10Hz to 10kHz taken at two positions on JGH’s listening couch for left and right speakers individually. (This graph includes the effect of all the room reflections as well as the direct sound from the loudspeakers.) Note how flat the upper midrange and treble are, though with some interference dips noticeable in the mid treble. This Nelson-Reed certainly gives a neutral midrange and treble balance in-room. In the bass and lower midrange, however, things are not so straightforward. The peak between 90Hz and 180Hz and the dip below between 200Hz and 400Hz are likely to be due to the interaction between the woofers and the proximity of the floor. The subjective importance of this kind of effect is hard to judge; the human ear is used to live sound sources being affected in this way and is therefore able to tune it out to some extent. (See “Letters” in this issue, however, for a contrary opinion on this subject.) Below 90Hz, note that though there is useful extension to below 30Hz, there is also a lack of energy between 40Hz and 80Hz—a musically most important octave—relieved only by a slight peak between 60Hz and 70Hz. This presumably correlates with JGH’s feeling that the 804s had a somewhat lean midbass.

I also took some quasi-anechoic measurements with MLSSA. To the left of fig.2 can be seen the individual woofer and port responses plotted up to 200Hz, taken in the nearfield. Though the port response is quite a narrow bandpass, centered on 30Hz, the woofers themselves start to roll out below 95Hz, where there is a suspicious little peak. A simplistic view of these curves would be

![Fig.1 Nelson-Reed 804-CM, 1/2-octave in-room response averaged across listening seat.](image1)

![Fig.2 Nelson-Reed 804-CM, anechoic response above 1kHz on listening axis at listening seat (average of both loudspeakers), corrected for microphone response, with nearfield woofer and port responses below 200Hz.](image2)

![Fig.3 Nelson-Reed 804-CM, nearfield impulse response of upper woofer (100ms time window, 1kHz bandwidth).](image3)

![Fig.4 Nelson-Reed 804-CM, nearfield impulse response of lower woofer (100ms time window, 1kHz bandwidth).](image4)

![Fig.5 Nelson-Reed 804-CM, nearfield impulse response of port (100ms time window, 1kHz bandwidth).](image5)

4 For those readers who feel a love of live motor-racing to be a dangerous hobby for an audio reviewer, I always wear effective ear protection. What alarms me about motor sport, however, where sound pressure levels near the track can easily reach a sustained and dangerous 120dB, is that I see so many spectators not wearing any kind of hearing protection. Couple things like that with the general predilection for listening to Walkman-type headphones too loud, and I fear that an entire generation is suffering premature hearing damage. —JA
to suggest that the woofers act in an over-damped manner so that the reinforcement in bass output supplied by the port occurs too low in frequency to be fully integrated. I suspect that things are more complex than that, however. Figs.3-5 show the nearfield impulse responses of the two woofers and the port from which the data to the left of fig.2 were derived via the Fourier Transform. It can be seen that the two woofers act in the same phase (though in JGH's system, this is with their polarity inverted). The nearfield port output in fig.5 is in the opposite polarity to the woofers, as expected, and rings for most of the 100ms time window shown, suggesting a Q somewhat higher than the 0.7 specified. (This kind of behavior is an audio analog of Heisenberg's Uncertainty Principle: the more you confine a drive-unit in the frequency domain, the more indeterminate its output becomes in the time domain. The same kind of behavior can be seen with the Snell Type B's rear woofer—see RH's review in Vol.14 No.12, December 1991.) But note the negative-going spike about 2ms into the plot in fig.5. I haven't seen this kind of behavior from a loudspeaker port before; it, too, suggests that the 804's woofer and port are behaving in a complex manner. I look forward to reading designer Bill Reed's thoughts on this matter in his "Manufacturer's Comment" letter.

To the right of fig.2 is shown the average of the quasi-anechoic in-room responses of both loudspeakers at Gordon's listening position. (This is only shown above 1kHz due to the presence of early reflections of the direct sound from the speakers in Gordon's listening room rendering the data below that frequency invalid.) Not as flat as the in-room response in fig.1, an overall tilted-down balance is broken by some peakiness in the mid treble and above 19kHz. The latter is irrelevant, though the former might well be due to breakup modes in the midrange dome.

—John Atkinson

Kinergetics SW-800
Subwoofer System

Jack English


In my review of the Martin-Logan CLS IIA (Vol.14 No.12), I concluded that the loudspeaker had a stunning array of sonic strengths coupled with some glaring weaknesses. Taken by itself, the IIA was simply unacceptably as a full-range speaker. My conclusion closely mirrored that of John Atkinson in his 1986 review of the original CLS (Vol.9 No.7). Based upon both of our reviews, the most logical outcome would have been to simply disregard the CLS. But to do so would be to take no advantage of the IIA's impressive list of sonic strengths. My intent for this "Follow-Up" was to fully utilize the strengths of the IIA's while compensating for their weaknesses through the use of ancillary products.

Briefly, my original criticisms of the CLS: 1) lack of deep-bass extension; 2) a tendency toward resonant, one-note midbass; 3) an overall lightweight character; 4) insufficient dynamic capability; 5) loudness limitations; 6) residual glare in the upper midrange; and 7) phasey/beamy treble. The more I lived with the CLSes, the less I felt these shortcomings were independent. The major problem was the bass performance. In fact, Martin-Logan addresses this problem in each of their other speakers—the Sequel, Quest, and Mono-
lith—through the addition of dynamic woofers.

My goal here, then, has been to build a true full-range speaker system around the IIAs. My model for this effort has been Martin-Logan’s own monstrous Statements, the Infinity RS-1s/Betas, and the Kinergetics/Martin-Logan setup demonstrated at numerous Consumer Electronics Shows. Since the IIAs’ major limitations are in bass performance, the primary solution seemed to be the selection of an effectively matched subwoofer(s). The subwoofer(s) would provide the needed deep-bass extension (problem 1) and eliminate the midbass resonance (problem 2). A subwoofer’s rich, full bass might result in a more harmonically rich overall character which would compensate for the IIAs’ lightweight sound (problem 3). Better bass might provide far more realistic dynamic performance, as much of the power of music comes from the lower frequencies (problem 4). With the added volume coming from the bass, the IIAs would not have to play as loudly to achieve the same SPLs (problem 5). It just might be that the upper-midrange glare was caused by the IIAs being pushed too hard to compensate for the lack of deep bass (problem 6). With a subwoofer producing all of the bass, the CLSes just might be able to concentrate on the things they do so well. One such subwoofer has been developed for just this purpose: the Kinergetics SW-800 system.

**Kinergetics SW-800 Subwoofer System**

The Kinergetics SW-800 Subwoofer System consists of two SW-800 Platinum Series Monaural Subwoofer Amplifier Crossovers and two SW-800 Tower Subwoofers, each component available separately. The complete system was designed using Martin-Logan’s CLS speaker series. Standard finishes are black oak, light oak, and clear oak, the last matching ideally with the CLSes’ light oak finish. Other finishes are available via special order.

Each SW-800 Subwoofer Tower contains five 10” SEAS woofers. While the columns look imposing, they are neither too large nor too heavy. At 95 lbs each, the columns can be moved about with relative ease. Their size
works particularly well with the similarly tall CLS IIAs.

The key to this system, however, lies in the crossover/amplifiers. For starters, they're true dual-mono; each comes in a separate chassis. Second, at 300W into the Towers' nominal 1.6 Ohm load, they're monstrously powerful. Third, since the amplifiers have been designed with the subwoofers, there are no problems with either load characteristics or power requirements. This is of particular importance given the subwoofers' impedance load.

The system's most fascinating element is the flexibility of the crossover. While each crossover/amplifier is exactly that, there is an option to bypass the bass amplifiers built into each unit. The bass gain control continues to function using either the internal amp or an external one. In a normal setup, the outputs from the preamplifier are connected to each crossover/amplifier; high-pass outputs are directed from the crossover/amplifiers to the amplifiers for the main speakers; and the subwoofer columns are connected directly. Using an external bass amplifier(s), the subwoofers would be connected to the external unit instead.

As delivered, the crossover is set at 100Hz. Internal DIP switches allow alternative crossover points of 60, 80, or 120Hz. The manual suggests having the dealer adjust these switches. Nonetheless, the settings are straightforward and described in the manual. Changing crossover points simply involves removal of the top cover and adjustments of the appropriate DIP switches.

Three low-pass options are available—6, 12, or 18dB/octave—each easily selectable via a toggle switch on the back of each crossover/amplifier. The 6dB setting, which should be phase-linear, provides the smoothest transition between the main speakers and subwoofers, but also allows the greatest amount of out-of-band signals to go to both sets of speakers. The 18dB Butterworth option minimizes out-of-band signals and provides the flattest response within the passband, but is not phase-linear. The 12dB option provides a +4dB boost near the crossover frequency. This position is intended only to rectify listening-room suckout problems.

There are also three high-pass options. As with the low-pass, the 6 and 18dB options are active. The 6dB is a buffered RC network, the 18dB a Butterworth; the latter takes the greatest amount of bass information away from the main speakers. The third option, a 6dB passive, consists of a high-quality capacitor in series with the signal path. This option is dependent on both the input impedance of the amplifier(s) used for the main speakers and the crossover point selected.

Such crossover/amplifier flexibility is a mixed blessing. The prospective purchaser should make sure the dealer sets up the units as desired. The correct crossover point must be selected via the internal DIP switches. If a passive high-pass filter is desired, the correct capacitors must be identified and installed.

Choices of high-pass filter and correct output must be made. The desired low-pass filter must be chosen and correctly set via the three-position switches on the back of each unit. The decision to use the internal or external bass amplifier(s) needs to be made and the corresponding connections installed. Finally, the bass columns need to be connected to the crossover/amplifiers or to an external amplifier. For the more technically comfortable user, the flexibility provides an extensive array of connection/use options.

**Performance**

The incorporation of any subwoofer into a system presents a wide array of potential problems. The first major one has nothing whatever to do with the subwoofer itself, but concerns the possible adverse impact on the performance of the main speakers as a consequence of introducing more equipment into the signal path. The usual culprit is the required crossover, but in actuality more than just a crossover is added. Without the subwoofer, the signal goes from the preamp, through an interconnect, and into the amp. With the subwoofers, the signal goes from the preamp, through an interconnect, into the crossover, through a second interconnect, and then into the amp. What sonic impact does this additional equipment have on the main speakers' sonic performance?

The Martin-Logan IIAs' strengths include an uncanny ability to unravel inner detail, remarkable transient performance, unparalleled sonic transparency, and seamless top-to-bottom coherence. (I address the impact on the last of these strengths later in this review.) For all of my listening, both the basic and additional runs of interconnect were the superlative Magnat Type Vi. To test the im-

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pact of the crossover/interconnect on the IIAs' performance, I relied extensively on the splendidly recorded *Masters of the Flute and Harp* (Klavier KCD-11019). The flutist is the wonderful Louise DiTullio, the harpist the equally talented Susann McDonald. With the crossover/interconnect in the signal path, detail resolution and transient performance continued to be state-of-the-art. The captivating sounds of both instruments remained sweet, pure, and natural. The subwoofers added just the right amount of bass foundation and fullness to the harp.

Transparency, however, was hurt slightly. There was a minor but audible loss of delicacy. The Kinergetics crossovers are not as sonically transparent as the other electronics I used during the course of this review: the CAT SL-1 Mk.II and C-J Premier 7A preamplifiers, ARC Classic 150 and C-J Evolution 2000 power amplifiers. Wiring the entire system was slightly problematic: the two C-J units invert phase, while the CAT, ARC, and Kinergetics do not. Because of the additional run of interconnect, I cannot unequivocally attribute the added coloration to the crossover. However, since the coloration struck me as somewhat solid-state in character, I believe the crossover was the culprit.

My other criticism of this new arrangement surprised me. When I used the subwoofers, the overall sound lacked air and adequate treble extension. Without the subwoofers, the IIAs sound better "balanced." The lack of truly extended trebles isn't as obvious coupled with the main speakers' lack of bass extension. With the addition of a proper bass foundation, the attenuated top was out of psychoacoustic balance. This had nothing whatever to do with the crossover. The inclusion of the subwoofers simply made more obvious an existing weakness of the IIA.

Overall, the inclusion of the crossover did little to harm the IIAs' performance. There was a slight additional transitory coloration, but no deleterious impact on detail resolution or transient performance. With the newfound bass extension, it became more apparent that the IIAs could benefit from greater treble extension.

The next phase of my listening concentrated on what the Kinergetics setup brought to the party. Jane's Addiction's *Ritual de lo Habitual* (Warner Bros. 25993-2) provided an ample illustration. On the IIAs, this music simply doesn't cut it. With the Kinergetics added, the result was an astonishing transformation. Suddenly this recording's substance was viscerally obvious. The added bass extension gave the music power, impact, drive, slam, punch, energy, etc. With the subwoofers, I could play it at realistic volumes and appreciate lifelike dynamics. With the subs, this recording became rock'n'roll again. Sonically, the system gained deep bass extension, midbass impact, and an ability to play much louder.

At one point during this review, I was fooling around with the BoDeans' *Black & White* CD (Slash 26487-2). For reasons unknown, this disc would play in some transports/players but not in others. I wondered if the center hole was slightly mis-sized or off-center. Having tried various things, I decided it was time to try a Sumiko CD Interface Mat. These clear, CD-sized, self-adhesive, clear plastic discs are put over the label side of a CD. With the Interface Mat in place, the CD worked more consistently in different players. On the Mini-Statement System, it was stunning. In particular, the track "Black, White & Blood Red" jumped out of the system. It had sock, whomp, and thrust—it got my listening room jumpin'. Without the subs, this music simply failed to come alive. It had no energy, no power, no authority.

Having just recently viewed the video *Sleeping with the Enemy*, I spent a great deal of time using the Mini-Statement System to listen to Bernstein's version of Berlioz's *Symphonie Fantastique* (EMI CDM 7 69002-2). All of the IIAs' superlative strengths shone brightly. I reveled in the plucked bass, the natural (for digital) strings, the sounds of the hall, the appropriately distant listening perspective, the realistic soundstaging, the unraveling of musical voices, the effortless dynamic swells, the overall rightness of the harmonic tapestry, and the enticing chimes in the fifth movement. The combination of dynamics and recreation of depth were particularly captivating in the "Marche au Supplice" introduction.

Over time, my primary concerns were the coherence of the subwoofers with the IIAs and the overall soundstaging of this four-column speaker setup. The Kinergetics subwoofers could produce bass no matter where they were placed in the listening room (this facilitated by the separate level controls on each crossover/amplifier unit). But if placed
behind the IIA panels, the energy from the subs interfered with the M-L electrostatics' purity of sound. The subwoofers' front panels had to be placed even with or in front of the IIA. Since the subs are not overly directional, they didn't have to be "aimed" like the IIA. The Towers could be located anywhere and aimed in almost any direction as long as they didn't fire into the IIA's panels.

In my initial setup, I simply placed the Towers outside of and behind the CLS panels. This is a setup similar to one I found worked well in my listening room with Infinity RS-1s. It didn't work with the Mini-Statement System. I then moved the subwoofers up even with the IIA. This resolved the problems created by having the subwoofers fire into the panels of the IIA, but the overall performance lacked coherence. Throughout this phase of my listening I sat in my normal listening position. All four speakers were approximately a third of the way into the listening room from the wall behind my equipment, while I was approximately a third of the way into the room from the wall behind me. As I moved my listening position back (ie, farther from the speakers), the system's overall coherence markedly improved.

But soundstaging suffered with my more distant listening seat. Sounds bunched up in center stage and lacked adequate width, although they had ample gradations of depth. The obvious solution was to spread the main speakers farther apart. To do this, I had to move the subwoofers out. I ended up with the subs almost against the sidewalls, aimed directly ahead and reduced in level to compensate for the additional bass reinforcement of this placement. I moved the IIA panels out to within an inch of the inside of the subwoofer columns, toed-in to aim directly at the listening position. With all four of the speakers moved farther apart and my listening seat pushed farther back, the soundstage "locked in." I now had a sound extending from wall to wall, and well back behind the four speakers.

"Problems solved!" thought I naively. "Not so fast, setup-breath!" screamed my reviewer's conscience. It seemed the dynamic subwoofers and dipole panels created sounds in such different ways that I wasn't done yet. Sounds from the subs tended to be more forward than sounds from the dipoles, which seemed to be located farther back. I couldn't move the subs back or the IIA up, or I'd have the subs firing into the electrostatics again. Here's where the ASC Studio Traps (reviewed in Vol.15 No.2, where I went into some detail on their effect on the sound of the Martin-Logan) came into play. With one Trap located in the rear-firing focal point of each dipole, the sound from the IIA moved forward. This improved the relative imaging of the subs and dipoles, but at a cost. The Traps robbed a bit more of the IIA's openness and spaciousness. Had the IIA had better treble extension, this might not have been as problematic.

I was left with a tradeoff. Using the Traps yielded more realistic soundstaging, at the expense of air and spaciousness. Removing the Traps gave a more spacious sound, with placement anomalies. The best compromise I was able to reach was with the Traps turned so that the reflective sides faced slightly forward and toward the inside (aiming at the space between the two dipoles and slightly toward the listening position). This provided enough added sparkle to justify leaving the Traps in place, which improved the soundstaging of the overall system.

One problem remained. The IIA lacks adequate vertical dispersion in the trebles; when I stand up, or sit in a higher-than-normal chair, the trebles lack energy. The CLS IIA really benefit from stands. Cement blocks have worked well for me but are absolutely unacceptable visually. The combination of the IIA and Kinergetics Tower Subwoofers are lovely to look at, so I removed the blocks and await the M-L stands eagerly. (I'd hoped to use the Arcici/Martin-Logan stands with the CLSes, but they haven't arrived. If they do, I'll write a "Follow-Up" on them.)

**Subwoofer Towers**

With a -3dB point at 17Hz, there's no question that the Kinergetics Subwoofer System totally eliminated any problem with deep-bass extension. Using the Stereophile Test CD, the subwoofers performed admirably down to the lowest (20Hz) test tone. Using the standard factory crossover point of 100Hz, the Kinergetics system is a true subwoofer setup. No other speaker system, full-range or subwoofered, has produced more deep bass in my listening room. Used with the IIA, the SW-800 system clearly provided extended deep-bass reproduction.
Of course, producing low-frequency sound is not enough. The more essential issue concerns the quality of that reproduction. A good test of deep-bass quality is the Glory soundtrack (Virgin 91329-2). With the IIA/Kinergetics combination, the deep bass was visceral in its power. An abundance of air was being moved about in my listening room, making deep bass felt as much as heard. The subwoofers’ ten drivers created a wonderfully powerful foundation to the music.

However, the Kinergetics subs do not sound like the Martin-Logan CLS IIAs. The two speaker systems have obviously different sonic characters. Even after I’d done everything I could with the overall setup, the subwoofers were always somewhat slower than the CLS panels. The subs also tended mildly toward overhang—sounds didn’t always end as quickly as they should have. With careful setup, however, the two systems can work together. Ideally, this total system should be used in a very large listening room where you can sit farther away than normal. As you move farther back, the overall performance grows more coherent.

The 100Hz crossover point solved the Martin-Logans’ midbass problem. The onenote 50Hz region identified by Martin Colloms in Vol.10 No.1 was shifted from the IIAs to the subs. As a result, there was little to excite the resonance region of the IIAs, and the subwoofers simply had no problem in this critical midbass area. The added extension, coupled with the richer midbass, resulted in an overall sound that could never be described as thin or harmonically eviscerated.

One additional concern: Level changes were not linear with system volume changes. As I cranked up the level, the subs got disproportionately louder. As a result, I couldn’t simply set the level on the crossover/amplifiers and forget it. As I listened to different performances at different levels, I periodically had to readjust the subwoofers’ level settings.

The only problem I continued to have with the subs was room placement. The reinforcement/cancellation effects in the deep bass became a real hassle. I simply wasn’t accustomed to worrying about 20Hz reinforcements and 30Hz cancellations. The subs reached so low that it became essential to get the deep bass right. Once I’d settled on the setup described earlier, I continued to move the entire setup back and forth from the rear wall. Different placements resulted in different patterns of reinforcements and cancellations. The listening room is a very significant factor with the Kinergetics subs; they’d be much better off in a larger room than mine (roughly 13’ by 24½’—see Vol.15 No.1, p.155). I strongly discourage the use of these speakers in small rooms, or rooms with inherent bass-reinforcement problems.

The IIAs’ limitations in dynamics and volume, identified by many reviewers, are a thing of the past with the Mini-Statement System. It can play as loud as you can stand, with lifelike swells and swings of volume. With the subs providing so much punch, the actual volume level of the IIAs can be lower while still achieving higher overall volume levels. This prevented the IIAs from being overdriven, when they have a tendency to become hard and glary.

The differences between the Martin-Logan CLS IIAs and the Mini-Statement System with the Kinergetics SW-800 Subwoofer Speaker System was monumental. With powerful works like Shostakovitch’s Symphony 15 (Haitink/LPO, London 417 581-2), certain aspects of the performance went from virtually nothing to something very special indeed. Listen to those percussive whacks! With the IIAs alone, they just aren’t real. With the addition of the subs, they are Shostakovitch! An even better example is Negativland’s “Car Bomb” (on Escape from Noise, SST 133). Ken Kantor of NHT sent me this CD to hear. When I listened to the song on the Martin-Logans, I wondered what it was all about. When I finally heard it on the Mini-Statement System, I suddenly understood!

Hi-fi equipment serves but one master—the music. No matter how long the list of stereophonic strengths, if a piece of gear isn’t faithful to the music, it isn’t worth it. The Mini-Statement System passed this most critical test with flying colors. Even with the oft-criticized CD medium, this hybrid speaker system produced music. For example, it has given me immense pleasure in appreciating Ricky Lee Jones’s long-awaited Pop Pop (Geffen GFED 24426), which finally fulfills the promise of her 1977 debut album. Her sensual rendition of Marty Balin’s 1967 Jefferson Airplane classic, “Comin’ Back To Me,” was enthralling. But this track would have been equally captivating with the IIAs alone.
Where the Kinergetics completes the picture is on tracks like "My One And Only Love." The recording has a close, intimate perspective, with uncanny realism: the sounds of fingers on guitar necks, Rickie's breathing, the plucked bass strings, the bandoneon sucking air. All of RLJ's whispered words and delicate phrasings are joyous. And the subs provide that critically essential bass foundation. The Mini-Statement System's full-range performance simply reproduced more of the real event. I couldn't get enough of songs like "Love Junkyard," which reminded me so much of "Last Chance Texaco." Rickie, why has this taken so long?

**CONCLUSION**

Mating the Martin-Logan CLS IIA speakers with the Kinergetics SW-800 Subwoofer System creates something larger than the sum of its parts. In short, it results in a sonically significant hybrid: the Martin-Logan/Kinergetics Mini-Statement System! As a true subwoofer system, the Kinergetics provide powerful, extended deep-bass performance; rich, articulate midbass; and impressive volume-level and dynamic capabilities. The IIAs, even played through the necessary crossovers of the Kinergetics system, remain stunning in detail resolution and transient capability. Properly set up, the hybrid system is acceptably coherent, with admirable soundstaging. The inclusion of the subwoofers eliminate the shortcomings of the M-L dipoles, while adding a bevy of their own strengths.

At a combined price of $8500 the Mini-Statement System is hardly inexpensive, but it's significantly less than a true Statement System, the Wilson Watt/Puppy/WHOW, or a pair of Avalon Ascents, and its performance certainly rivaled any of these all-out, full-range speaker setups. Taken in that context, the Mini-Statement System may actually be a bargain.

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**Kiseki Blue Goldspot Moving-Coil Phono Cartridge**

Dick Olsher

Low-output, medium-compliance, moving-coil cartridge. Nominal output: 0.4mV. Internal impedance: 5.3 ohms. Channel balance at 1kHz: ±0.25dB. Channel separation at 1kHz: 30dB. Tracking force: 1.8-2.0gm. Cartridge weight: 11.4gm. Stylus type: hyper-elliptical; 0.3 x 0.7 mil radii. VTA: 20°. Sample tested: SN 2013. Price: $700. Approximate number of dealers: 25. US Distributor: Sumiko, P.O. Box 5046, Berkeley, CA 94705. Tel.: (415) 843-4500. Fax: (415) 843-7120.

Koetsu. Kiseki. Keebler. Products from all of these firms are shrouded in at least a bit of mystery. Do I believe that Koetsu cartridges are hand-built by an octogenarian samurai swordsmith, or that Kisekis are imported from the planet Vulcan, or that Keebler's cookies are baked by elves? Not really. But it does help to liven up the domestic audio scene.

"Look, son—see what Scottie just beamed down."

"Gee, Dad, it's big and blue with a gold spot on the front, and it kind of looks like a cartridge."

"Nice guess, son. No ordinary cartridge, this one. Let me tell you about the Vulcan analog freak in Hong Kong..."

At its asking price of $700, the Blue Gold brings up the rear in the Kiseki lineup. However, don't mistake this cartridge for a half-hearted effort to fill in an attractive price point. It's well built; with a body machined from a solid block of aluminum/magnesium alloy, it looks as if it could easily withstand a trip into outer space. The cantilever is similar in concept to that of the Sumiko Virtuoso DTi, although less expensive materials are
used: a boron deposit overlaying an aluminum rod. The low mass of the aluminum rod maintains a low stylus-tip mass, while the boron layer stiffens the rod and provides damping for resonances in the aluminum.

The coils are made of oxygen-free copper, and I'm told that a proprietary fluid is applied to the coils to reduce the effects of temperature and humidity on the generator. The magnets are charged after the yokes are connected, to achieve the highest possible field strength. Another interesting feature is that, as with other Kisekis, the stylus is super-polished with human hair! I guess the guys at Kiseki get plenty of haircuts.

Since this cartridge is unlikely to be partnered by a very expensive tonearm, I approve of the choice of a non-line-contact stylus footprint. For optimum performance, a line-contact stylus requires a tonearm that allows for precision VTA and azimuth adjustments. I venture to say that most audiophiles who own such cartridges have not set them up properly. Styli that mimic the cutterhead profile look good on paper, but few audiophiles have the tools or the patience to set them up correctly.

The "Big Blue" was partnered exclusively by the Graham Model 1.5 arm throughout my evaluation. Because the top-plate screw holes are threaded, mounting the cartridge to the headshell proved easy. Tracking force was set at 2.0 gm. I experimented quite a bit with VTA before settling on about a half a degree's (at the arm pivot) tilt from parallel to the surface of the record.

SONIC IMPRESSIONS

Entering the reference system right after the Koetsu Pro IV's exit, the Blue Goldspot was really on the spot—the Koetsu's sonic glory was still vividly fresh in my memory. Surprisingly, the Kiseki did not in any way embarrass itself, in some performance aspects actually matching or exceeding the majestic but overly lush Koetsu.

The treble balance was restored to its proper perspective, and the bass kicked ass right out of the box. Many affordable MC cartridges are recognizable by bright balances which, at worst, are accompanied by threadbare midrange textures. The resultant presentations are typically etched and overly analytical—a sonic blend that unfortunately spells "Hi-Fi" for many audiophiles.

Not so with the Kiseki—its presentation was never analytical. But neither at any time did it sound lush or romantic. This cartridge consistently sat on the fence between good tube sound and solid-state directness. It was thus more comfortable with the Convergent Audio Technology SL1 preamp than with the Threshold FET-ten/.

With the Threshold, the slightly wiry and grainy lower treble bothered me much more than it did with the CAT. This was most noticeable during the reproduction of soprano voices, when the timbre of the highest-pitched formants was affected. I spent a considerable amount of time experimenting with cartridge loading in order to tame this coloration, finally settling on a 20 ohm loading as a compromise between lower-treble zip and loss of dynamics. Pushing the loading lower provided more effective damping of the resonance, but at the cost of a loss in dynamic breadth, hence dramatic impact. At this setting, treble transients were quick and well-controlled, and the extreme treble nicely extended, but the texture of the lower treble remained a bit on the dry and gritty side.

With the CAT SL1, I was able to push the cartridge loading to 300 ohms as the best compromise between treble control and dynamics. Even a 50 ohm loading with the SL1 proved disastrous, as the treble took a nosedive and dynamics were noticeably squashed. On the other hand, a 47k ohm loading proved too much; the lower treble turned wiry. A loading in the range of 300 to 400 ohms appeared to be optimum—exactly what John Hunter at Sumiko had indicated.

Big Blue did very well in fleshing out a soundstage. The expanse of voices in a natural acoustic that lends Laudate! (Proprius 7800) so much charm was not lost on the Kiseki. The feel of the hall was clearly communicated. The Kiseki's soundstage presentation was consistently spacious, this due in great measure to its ability to realistically portray depth. Image outlines, though nicely focused, were not floated in space with the sort of conviction only much more expensive cartridges are capable of. Spatial outlines, though resolved well enough to adequately differentiate massed voices, lacked the incisiveness that marks the transition from mere reproduction to the Gestalt of live music. The illusion of being there was further hindered.
by a loss of soundstage transparency. Still, the degree to which the ability to see far into the soundstage was diminished was not large. It was as though I was gazing at the soundstage through a window which had not been washed in a while. While the dirt built up on the glass was small, it kept intruding in a cumulative way to remind me that I was, after all, listening to canned music.

The Kiseki proved a very good tracker, unfazed by anything I threw at it. The choral climaxes that punctuate much of Belshazzar's Feast (EMI SAN-324) were reproduced cleanly and without congestion. Perlman's violin tone (Bruch, Violin Concerto, EMI ASD 2926) was deliciously sweet and focused.

The mids in general were naturally detailed: while I was made aware of plenty of low-level detail, I was neither overwhelmed by it nor made to feel that the underlying texture of the music was being laid bare. Musical textures were neither hard nor mechanical, and, especially with the CAT, were capable of sounding eminently liquid. In this respect the Kiseki resembled the performance of a topnotch moving-magnet cartridge more than that of a moving-coil.

The Goldspot's bass response far exceeded what one might expect from a cartridge at this price point. It even exceeded the bass performance of the Koetsu Pro IV! The Kiseki's bass punch, pitch definition, and control really broke the price barrier. Tympani strokes were reproduced with full weight and punch, bass lines were tight and readily resolvable, and plucked double bass was articulated with great clarity. There was never any need for me to strain to pick out the double basses from the basement of the orchestra.

To get a good feel for—and just plain feel good about—what the Kiseki can do right, give a listen to Ernestine Anderson's Never Make Your Move Too Soon (Concord Jazz, CJ-147). "What a Difference A Day Made" will make a believer out of you. There was Ray Brown on bass, his delivery still fresh and sturdy after all these years. This guy is amazing. It's hard to believe he was one of the founding members of the original Modern Jazz Quartet in 1951. Each of his chords cut through the soundstage with convincing speed and control. And there to the right was Monty Alexander on piano, strolling smoothly through the melody. There's no problem in picking up the drums, brushed cymbals, and all. Ah, Ernestine...her sultry, honey-colored voice leaped forward cleanly, with full emotional impact. Here the Goldspot hit the spot just right. When you think of Ernestine, think Kiseki!

**SUMMARY**

It's safe to say that the Kiseki Blue Goldspot does nothing really badly and some things very well. Bass control and definition would be outstanding at any price. It's just what the doctor ordered for clearing up orchestral foundations and tightening up bass lines. The mids are tonally quite neutral, being neither lush nor romantic, and, with the assistance of an excellent tubed preamp, are capable of sounding texturally and sweet enough to satisfy even the most jaded of appetites. Low-level detail is resolved without overloading one's nervous system. Some MC cartridges, assuming that the listener is a pin-cushion, take aim with lots of piercing, etched detail. Not the Kiseki. Its presentation is natural and easy on the ear. Treble transients are quick and well-behaved, with excellent top-end extension. The soundstage presentation is spacious, with convincing portrayal of depth. Image outlines are nicely focused, though outlines do not float in space with the solidity and spatial resolution afforded by much more expensive cartridges.

On the debit side, the soundstage is slightly veiled. How much will that distract you from enjoying the music? Only you can decide. I found the cumulative effect of constantly peering into the stage through a slightly dirty window a hindrance to full involvement. Also, the lower treble tends to be wiry and grainy. Proper cartridge loading does dampen the lower treble, but even so, this range remains a bit too dry for my taste. This is another reason to match the Kiseki with a tubed preamp, so as not to aggravate this region with solid-state treble nasties.

The Kiseki would make an excellent choice for someone graduating from a MM cartridge. The transition should be painless and rewarding: the Kiseki emulates some of the natural qualities of a good MM while offering additional benefits through the upper octaves. Provided that care is taken in the choice of a partnering preamp (a tubed preamp would be ideal), the Kiseki Blue Goldspot is a safe recommendation.
Kinergetics KCD-55 Ultra D/A Converter

Robert Harley

Since the first digital processor on the market using UltraAnalog DACs appeared (the $12,000 Stax DAC-X1t, reviewed in Vol.13 No.8), there has been a proliferation of good-sounding processors using this extraordinary —and expensive—part. Among these are the Audio Research DAC1, DAC1-20, VTL Reference D/A, and the groundbreaking Mark Levinson No.30 reviewed last month.

We can add another product to this illustrious list: the Kinergetics KCD-55 Ultra. Although the KCD-55 is the latest processor I’ve auditioned using UltraAnalog DACs, Kinergetics would have been the first to market with such a product had it not been for a quirk of fate. At the 1989 Audio Engineering Society Convention in New York, UltraAnalog had hundreds of thousands of dollars’ worth of custom equipment stolen—including Kinergetics’ only prototype of an UltraAnalog-based version of their highly regarded KCD-40 CD player.1 Rather than start over with the CD player, Kinergetics decided to build an ambitious outboard D/A converter instead.

The result is the KCD-55 Ultra reviewed here, Kinergetics’ top-end digital product. As often happens after loss or destruction, the opportunity to rebuild creates something better than what was originally lost. Kinergetics used their months of design experience on the KCD-40 Ultra as a launching platform for this more high-reaching effort.

Let’s see what they’ve come up with.

TECHNICAL DESCRIPTION

The KCD-55 Ultra (hereafter called simply the Ultra) is an unusually and beautifully built component. The thick front, rear, and side panels are made from CNC machined extruded aluminum. These panels are then attached to a separate sheet-metal chassis that holds the printed circuit boards. This construction technique results in both a very solid build and an expensive, elegant appearance.

Two knobs, two switches, and an LED comprise the front-panel controls and indicators. These functions are common to most digital processors: power on/off indicator LED, polarity reversal switch, and selection between two digital inputs. The knobs, however, are unusual. The first attenuates the level from the “variable” analog outputs, obviating the need for a preamplifier or passive level control in CD-only systems. Rare, but not that unusual. The knob on the panel’s righthand side, however, is another story. Marked “Processor,” this control reportedly allows the user to tailor the sound to match system and tastes. I’ll have more to say about this function later.

The rear panel has two pairs of analog outputs on RCA jacks, one fixed level and one

1 I was most impressed with the KCD-40 when I reviewed it two years ago, in January 1990 (Vol.13 No.1). It uses two Analog Devices AD1860 18-bit DACs per channel in a push-pull configuration.

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variable, with the latter controlled by the front-panel volume knob. Although the rear panel is machined for two coaxial inputs, only one RCA jack is fitted. The second input’s hole is covered by a plug (the circuit topology can accommodate up to four digital inputs). An AT&T ST-type optical input is provided on newer production, reflecting the general agreement that ST-type optical is superior to either coaxial or Toslink interfaces. Kinergetics commendably added the expensive ST-type input without raising the Ultra’s retail price.

Popping the top panel, I was surprised by the Ultra’s minimalist design; there were fewer parts than found in most converters. The analog output stage, power supply, and “glue logic” (the chips that make everything work together) were all executed with a minimum of parts. A closer examination, however, revealed some unusual and tweaky design techniques.

Starting with the power supply, three transformers are used, one toroidal for the analog stages and two standard laminated types for the digital supply. These are mounted on a separate pcb in the front left-hand corner, away from the rest of the circuit. The digital supply transformers were selected on the basis of their ability to keep RF noise generated by the digital circuits from getting back into the AC line.

There are a total of eight regulation stages for six supply voltages (two digital and four analog). The analog supply is regulated by standard three-pin IC regulators, then, for the critical output stage, is regulated again by a discrete circuit using a pair of OP42 op-amp chips located right next to the output stage. Wherever a rail supplies a circuit stage, a Roederstein polypropylene decoupling capacitor is employed.

The input receiver is the ubiquitous Yamaha YMJ3623B, but implemented with Kinergetics’ proprietary jitter-reduction circuit. A Sony CXD1144B chip provides 8x-oversampling digital filtering. This chip is the most powerful (highest number of taps) and expensive of the digital filters, selected after auditioning a variety of filter chips. The input receiver, filter, AT&T optical input jack, and associated components are mounted on a separate pcb toward the back of the chassis.

The rest of the circuit is contained on a large pcb that consumes about a third of the chassis’s real estate. I was particularly impressed by the output stage: it’s all discrete, class-A, direct-coupled, and uses high-quality parts. The circuit is essentially a “discrete op-amp,” with bipolar transistors and JFETs providing gain and a Precision Monolithics BUF-03 acting as the op-amp’s output. This is the same part Corey Greenberg was so enthusiastic about in his DIY buffered passive preamp article last November. It can drive large amounts of current (40mA), and has no problem with low impedances (it was designed as a 75 ohm line driver). Because the Ultra’s analog stage is direct-coupled, an NE5532 op-amp and pair of trim pots form a DC servo circuit to prevent DC from appearing at the analog output. The front-panel level control is a high-quality metal-film type ganged pot (with separate left and right channel adjustment) that attenuates the output level from the variable output jacks. Note that this pot is an attenuator after the gain stage, not part of the gain-determining feedback loop. Deemphasis is passive, switched in by a solid-state device instead of by a relay.

Now, about that front-panel knob marked “Processor.” According to designer Tony DiChiro, it’s a “hysteresis control.” This circuit is found in all Kinergetics electronics, but the Ultra is the first product to provide user adjustment of the circuit.2 The control’s range is quite narrow to prevent overuse and sonic degradation, but reportedly produces enough change in sound for final system matching. I’ll comment on the control’s sonic effects later.

Where the Ultra really gets elaborate, however, is in the critical digital/analog conversion stage. Not only does the Ultra use the best DACs currently available—the two-channel, 20-bit UltraAnalog DAC D20400—but it employs two of them for differential operation. In this scheme, each dual DAC receives the digital code representing the analog signal and the same code inverted. One channel of the dual DAC converts one polarity to analog, the other channel converts the

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2 The Modern Dictionary of Electronics (Howard Sams, publisher) defines hysteresis as (definition #5) “A form of nonlinearity in which the response of a circuit to a particular set of input conditions depends not only on the instantaneous values of those conditions, but also on the immediate past (recent history) of the input and output signal. Hysteric behavior is characterized by inability to ‘retrace’ exactly on the reverse swing a particular locus of input/output conditions. . . . This term literally means to lag behind.”
other polarity. This produces two analog output signals of opposite polarity for each channel. When the two opposite-polarity signals are amplified differentially in the output stage, only the wanted difference between the two signals is amplified. Any noise, distortion, or artifacts common to both channels are thus rejected—a phenomenon called “common-mode rejection.”

Kinergetics uses this technique in all their digital products. It becomes very expensive, however, when using 20-bit Ultra Analog DACs. For comparison, the KCD-55p, which uses the same chassis, power supply, pcb, digital filter, and discrete output stage as the Ultra, sells for $1695. The only difference! The KCD-55p uses the Analog Devices AD1860 DACs found in the KCD-40 (and the ST optical input is optional). Incidentally, owners of the KCD-55p can have their units upgraded to the Ultra version for $2500, about $200 more than if the Ultra were purchased initially.

Overall, I was impressed by KCD-55 Ultra’s build quality, thoughtful design (particularly the additional discrete regulation stage for the analog output and the output section itself), and use of two very expensive Ultra Analog 20-bit DACs.

LISTENING

The Ultra was auditioned in my usual reference system: Audio Research LS2 line-stage preamplifier, VTL 225W monoblocks, Muse Model 18 active subwoofer, and Hales System Two Signature loudspeakers. The digital source was a Theta Data, driving the Ultra with either the ST-type optical link or a variety of coaxial interconnects (primarily the ST optical, however). Analog interconnects were Straight Wire Maestro, and loudspeaker cable was 3’ bi-wired runs of AudioQuest Dragon/Clear. AC power was conditioned by a Tice Power Block and Titan.

A logical comparison for the Ultra was the Audio Research DAC1-20. The ARC is similarly priced ($3500), uses an Ultra Analog DAC, and has established a reference level of musicality at its price. Any digital processor selling for about the same money must regard the DAC1-20 as formidable competition.

After my first listen, I was pleasantly surprised by the Ultra; it more than held its own against the DAC1-20 in some respects. In addition, the Ultra offered a different perspective on the DAC1 that may appeal to many music lovers.

First, the Ultra had excellent bass—tight, controlled, and with powerful dynamic impact. In fact, the Ultra had the best low-frequency reproduction of any of the Ultra Analog-based processors I’ve auditioned, save the Mark Levinson No.30. I have previously criticized the bass performance of Ultra Analog-based converters as lightweight, soft, and lacking dynamics. I had mistakenly attributed this characteristic to the DAC, not the implementation. The Ultra (and the No.30) set the record straight. The bottom end seemed to extend deeper than heard through the DAC1-20, with a more taut and less fat rendering. Dynamics were also superior, with a greater sense of slam and power. Listen to the kick drum in the tune “Are You Scary?” from the new Sheffield CD The Usual Suspects. Through the Ultra, it had a punch and depth rivaled only by the No.30 and Wadia 2000.

In addition to being tight and punchy, the low end was round, solid, and had a satisfying fullness. Acoustic bass had a warmth and liquidity I particularly enjoyed. Pitch definition was excellent, with clear articulation of each note, even with fast and complex bass lines. Listen to the acoustic bass on “Round Midnight” from Kenny Rankin’s Because of You (Chesky JD63, reviewed in this issue). This is a stunning recording; the track mentioned (vocal and bass only) is very revealing of how well a converter conveys the instrument’s roundness, warmth, and fine detail. Through better processors, the instrument will sound more “bass-like,” and less flat or wooden. Through the Ultra, the bass was superbly portrayed. Overall, the Ultra’s bass reproduction was exemplary, and clearly a step above the DAC1-20’s.

When it came to presentation of midrange and treble textures, however, I preferred the DAC1-20. The Ultra had a trace of hardness through the upper mids and lower treble that was contrasted with the DAC1-20’s ease and liquidity. On Three-Way Mirror (Reference Recordings RR-24CD), for example, the acoustic guitar, flute, and cymbals sounded slightly edgy. In addition, the presentation
was more forward, with less sense of ease. It wasn't a case of not enjoying the Ultra—it was very liquid and had more natural rendering of midrange textures than most processors—but it fell short of the Audio Research unit, which excels in these areas. Long sessions with the Ultra tended to be more fatiguing than with the DAC1-20, and there was less inclination to listen at high levels.

Though the treble was smooth, I wouldn't characterize the Ultra as laid-back. Rather, it struck a good balance between revealing HF detail and being overly soft, with a tilt toward revealing detail. Treble textures had a trace of hardnes compared to the DAC1-20, and sounded more "digital." In addition, the treble could at times sound a little on the etched and analytical side of reality, rather than soft and gentle. I wouldn't use the words "refined" and "delicate" to describe the Ultra's treble, characterizations I've used to convey the DAC1-20's presentation.

These drawbacks were more than offset, however, by the Ultra's superb rendering of detail and ability to separate individual instruments from the whole. The presentation was infused with a wealth of fine detail; subtle sounds that were blurred through the other processors became vibrant and alive through the Ultra. The brushed snare drum on Jazz at the Pawnshop (Proprius PRCD 7778), for example, was made up of many finely woven components rather than fused into a single sound. It also had a vibrancy and palpability rarely heard through any processor. Inner detail was rendered with a precision and life that made me feel as though I were hearing more music. Without a doubt, the Ultra presents another level of information to the listener. In this regard, the Ultra approached the No.30's stunning resolution of detail, but with less ease and warmth.

There is one important presentation aspect in which the Ultra is superior to just about every other converter I've auditioned, except the No.30: creating the illusion that the presentation was made up of individual images, not merely variations in a synthetic tapestry. On Robert Lucas's Luke and the Locomotives (AudioQuest AQ-CD1004) there was a convincing impression of the individual band members in the listening room (especially on the track "Feel Like Going Home"). The soundstage was beautifully fleshed out, with superb delineation of each instrument. Images were tight, well-defined, and thrown with pinpoint precision. This superb image specificity was accompanied by a feeling of air and space surrounding the instrumental outlines. The Ultra's portrayal of depth and space was excellent, with a distinct three-dimensional quality. Naturally miked music with subtle spatial cues was well served by the Ultra: the listening room assumed a wide range of apparent sizes throughout the auditioning, accurately reflecting the recording's characteristics. Soundstage width was similarly good; the musical presentation was thrown in a wide arc across the listening room, making it easy to enjoy the music and forget about the loudspeakers.

The Ultra's crystal-clear soundstage transparency further heightened these impressions. The result was a convincing illusion of individual instruments hanging in space around the loudspeakers. I really enjoyed this aspect of the Ultra's presentation; music was more lifelike and less homogenized. If I had to name the Ultra's best attribute, it would be this. Moreover, the ability to separate individual images from the presentation is rare in digital processors, and an aspect I find musically important. The Ultra was the antithesis of synthetic homogeneity.

When it came to dynamics, the Ultra was topnotch. Transient detail was razor-sharp, with fast, clean leading edges. Drums had power and energy not heard from the DAC1-20. The sound of the stick hitting the head was well conveyed, giving a greater feeling of the drummer's rhythmic contribution to the music. I recently recorded a great-sounding drum kit with just two microphones in a live room with a very pure, all-tube signal path. Playing back the DAT master tapes revealed the Ultra's ability to recreate the steep attack that gives drums immediacy and life. The Ultra's dynamic quality and transient quickness conveyed an increased sense of rhythm and energy, especially on jazz and blues.

Most of these impressions were gained with the Ultra going through an Audio Research LS2 line stage. Driving the power amplifiers directly from the variable outputs slightly improved the overall transparency and palpability. The LS2 is, however, extraordinarily transparent; listeners with most other preamps that are not as neutral will realize...
much greater benefits from using the Ultra's variable outputs and front-panel volume control.

Finally, I heard very little difference when using the front-panel “Processor” control. The presentation seemed a little softer toward the counterclockwise side, and more immediate with it turned up. Its effect, however, was far less than the differences described between the Ultra and DAC1-20. I must also add one complaint about the Ultra: there was a loud click when switching inputs. Users are therefore advised to mute their preamps or turn down the Ultra's level control when switching between digital sources.

**Measurements**

The Ultra put out a very low 1.37V from the fixed-level outputs when decoding a full-scale, 1kHz sinewave. This is 3.3dB lower than the CD standard 2V output level, the only lower output we've experienced being the 730mV from the Sonographe SD-22 CD player reviewed by CG last month. The variable-level outputs, however, put out a whopping 4.18V with the level control all the way up. This makes a lot of sense: in a system with an active preamp, 1.37V is plenty of signal; for driving a power amplifier directly with the Ultra's variable output, the higher output voltage is essential.

The level attenuator's channel balance was measured at six settings between 500mV and 4V. At 500mV, the right channel was 0.46dB lower in level than the left channel. This moderate imbalance decreased to virtually no error (0.05dB) at 1V output (a typical output level) and maintained a comparable tracking accuracy (less than 0.08dB) up to 4V output. From the fixed outputs, the right channel was 0.12dB higher than the left channel.

Frequency response, shown in fig.1, was flat over most of the band, but with a 0.45dB rolloff at 20kHz. De-emphasis error (fig.2) was negligible and consistent between channels, with a 0.12dB negative error at 20kHz.

Looking at a spectral analysis of the Ultra’s output when decoding a –90dB, 1kHz sine-wave (fig.3) revealed good low-level linearity, with excellent matching between channels. There is, however, a large amount of power-supply–related noise at 60Hz, 120Hz, and 240Hz. The 120Hz component is equal in amplitude to the test signal. When I first saw

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**Fig.1** Kinergetics KCD-55 Ultra, frequency response (right channel dashed, 0.5dB/vertical div.).

**Fig.2** Kinergetics KCD-55 Ultra, de-emphasis error (right channel dashed, 0.5dB/vertical div.).

**Fig.3** Kinergetics KCD-55 Ultra, spectrum of dithered 1kHz tone at –90.3dB with noise and spuriae (1/3-octave analysis).

**Fig.4** Kinergetics KCD-55 Ultra, departure from linearity (right channel dashed, 2dB/vertical div.).
This, I considered it a measurement artifact and not intrinsic to the Ultra. I tried every possible permutation of grounding hookups between the processor and the Audio Precision System One to remove the hum, but was unsuccessful; this was the best-looking trace obtainable. When the Ultra’s chassis wasn’t grounded at all to the System One, some energy appeared in this curve at 4.2kHz at a level of about -100dB. This suggests users should pay attention to the Ultra’s grounding arrangement in their systems.

After performing this measurement, I put my ear right up to the loudspeaker and turned the Ultra’s level control all the way up. Not a trace of hum was heard, casting doubt on the existence of the noise seen in fig.3.

Linearity, shown in fig.4, was excellent—
as I’ve come to expect from Ultra Analog DACs. At -90dB, the error was +0.08dB (left channel) and +0.16dB (right channel)—virtually perfect. At -100, there was a 0.68dB positive error (left) and 0.96dB (right). This “error” is more likely noise at this extremely low signal level. This is about as good as D/A converters get.

Interchannel crosstalk (fig.5) was fairly good, measuring 90dB at 100Hz, decreasing to 76dB at 10kHz. Capturing a -90dB, undithered 1kHz sinewave produced the plot of fig.6. The sinewave looks a little unusual in that the negative-going portion of the waveform looks different from the positive. In addition, the power-supply noise seen in

**Fig.5** Kinergetics KCD-55 Ultra, crosstalk (5dB/vertical div.).

**Fig.6** Kinergetics KCD-55 Ultra, undithered 1kHz sinewave at -90.31dB.

**Fig.7** Kinergetics KCD-55 Ultra, HF intermodulation spectrum, 300Hz–30kHz, 19 + 20kHz at 0dBFS (linear frequency scale).

**Fig.8** Kinergetics KCD-55 Ultra, 1kHz squarewave at 0dBFS.

**Fig.9** Kinergetics KCD-55 Ultra, noise modulation, -60 to -100dBFS.

**Fig.10** Mark Levinson No.30, noise modulation, -60 to -100dBFS.

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fig.3 overlays the 1kHz sinewave. Notice how the tops of the waveforms don't line up horizontally, indicative of a low-frequency component in the signal.

The Ultra had a low level of intermodulation products when decoding a combination of 19kHz and 20kHz at full scale (fig.7). The 1kHz product is well suppressed, and the 24.1kHz product (44.1kHz sampling frequency minus the 20kHz signal) is absent. The shape of a full-scale, 1kHz squarewave (fig.8) is typical of linear-phase digital filter chips like the Sony CDMX1144B.

Output impedance from the fixed outputs was a fairly low 245 ohms across the band. The variable outputs had an extraordinarily low output impedance of 1.2 ohms at 20Hz, increasing to 1.6 ohms at 20kHz (measured with the level control full up). As expected, this value increased with the level control in a typical position (750mV output), to 313 ohms across the band. The Ultra should thus have no trouble driving any power amplifier or cable.

The Ultra doesn't invert absolute polarity unless the front-panel switch is in the "invert" position. I was a little disturbed by the fairly high level of DC at the outputs: 86mV from the fixed outputs. No DC was measured at the variable outputs, suggesting that a coupling capacitor is part of the variable-level output circuit. I surmise that Kinergetics designed the Ultra with the assumption that the fixed outputs would be used with a preamp that would prevent DC from reaching the power amplifiers, but the variable outputs would have no such protection.

A new digital processor measurement was described in a short feature following the Mark Levinson No.30 review in last month's issue. Basically, I drive the processor with data representing a low-frequency (41Hz) sinewave at levels ranging from -60dB to -100dB, remove the sinewave from the resultant analog signal with a steep high-pass filter, then analyze the residual noise across the audio band. Ideally, the noise floor measured in this manner should be a straight line sloping up from left to right at all levels of the 41Hz sinewave. In practice, the noise changes its level in the presence of signal (this is called "noise modulation"), meaning that the traces taken at different levels will no longer overlay. The greater the disparity in noise floors, the worse the sound, is the supposition behind this measurement technique. The Ultra's noise modulation results are shown in fig.9, with, for comparison, fig.10 showing that of the Mark Levinson No.30. The KCD-55 Ultra's noise floor is considerably higher than the No.30's. It has, however, a close grouping of the curves, meaning that the noise floor will not change in level or tonal quality along with the music.

Overall, the Ultra measured well except for the power-supply-related noise seen in the spectral analysis. Although I repeated the measurement at two different locations and with many grounding arrangements (with the same results), I still suspect that the noise could be a measurement artifact.

**Conclusion**

If I had to count my favorite digital processors on one hand, the Kinergetics KCD-55 Ultra would be included. I really enjoyed my time with the Ultra: It consistently conveyed the music with life and vitality. The Ultra had many strong points that made it musically involving, especially its ability to differentiate individual instrumental images. I also found that its presentation of detail and transient quickness gave music a heightened sense of energy. Further, the Ultra excelled at throwing a spacious, well-delineated soundstage with pinpoint images. To top it off, the bass rendering combined power and punch with liquidity and pitch definition. Overall, I thought it was a terrific processor.

Having said that, I can easily see how many listeners will prefer the Audio Research DAC1-20's greater ease and gentleness over the Ultra's more incisive presentation. The DAC1-20 was more analog-like in its portrayal of instrumental textures, but ultimately presented less information to the listener. Playback systems that lean toward the etched and analytical may benefit from the DAC1-20's greater ease. I enjoyed listening to both processors; I'm sure their different interpretations will each find an audience.

The Ultra's variable output is a powerful attraction for listeners with CD-based systems. No preamp, passive level control, or extra interconnects are needed: just plug your CD transport and DAT recorder into the Ultra, and plug that straight into the power amplifier. Getting an active preamp and second pair of interconnects out of the signal...
path—especially if they’re colored—will greatly improve a playback system’s overall transparency and musicality.

After just having spent many enjoyable hours with the $14,000 Mark Levinson No.30, the KCD-55 Ultra struck me as emulating some of that reference product’s best characteristics. The detail, image specificity, and dynamic contrast that made the No.30 so stunning were heard in the Ultra, albeit to a much smaller degree. The No.30 did this, however, with an ease not heard from the Ultra. Nevertheless, this says a lot about the Ultra’s special qualities.

If you’re considering buying one of the megabuck processors, give the Kinergetics KCD-55 Ultra a listen. It’s up there with best of them.

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**Rotel’s Hot Tomatoes**

Corey Greenberg runs his glove-sheathed pinkie over the new RCD-955AX and RCD-965BX CD players from Rotel.

Rotel RCD-955AX CD player

Rotel RCD-955AX 16-bit CD player. Output voltage: 2V RMS. Output impedance: 200 ohms. Dimensions: 17.3" (440mm) W by 3.6" (92mm) H by 12.5" (316mm) D. Weight: 5.8kg. Price: $449.

Rotel RCD-965BX CD player

Rotel RCD-965BX 1-bit CD player. Output voltage: 2V RMS. Output impedance: 200 ohms. Dimensions: 17.3" (440mm) W by 3.6" (92mm) H by 12.5" (316mm) D. Weight: 5.8kg. Price: $549.

Both: Approximate number of dealers: 200. US distributor: Rotel of America, P.O. Box 653, Buffalo, NY 14240. Tel: (416) 771-6610. Fax: (416) 882-8397.

On the mantel sat a stuffed Culo snake from Nuevo Laredo, with a red rubber tongue in freeze-frame flick. Above the bookcase hung the mounted head of a wild pôi dog, killed in self-defense in Sri Lanka with only a Phillips-head screwdriver. A table-lamp made from a shellac’d, puffed-up frog wearing a sombrero and playing the contrabassoon bathed the room in a soft cream glow.

But the only living thing in this pack of once-proud beasts was the young man sitting at the kitchen table, slowly pecking at the keys of a rundown Bondwell laptop and blowing soap bubbles out of the antique ivory pipe stuck in his frowning mug.

"...and, in conclusion, I think the Bitstream Rotel RCD-865BX is—"

**BRRRRRING!**

The reviewer stopped tapping on the laptop and answered his phone. An excited voice with a clipped British accent came on the other end.

"Whew! Mike Bartlett here, the new head of Rotel America. I was just informed you were reviewing our RCD-865BX, and I wanted to catch you before you’d finished;

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it's been discontinued, you see . . ."

The reviewer's grip tightened on the receiver.

"Bloody sorry I didn't call sooner, but I only found out about your review today . . . look, I know you've spent a long time listening to the 865, so tell you what; let me send you our new 965BX and 955AX, and you can spend another couple of months listening and writing, okay? Okay? Hello?" The line went dead in Bartlett's ear.

The reviewer shut off the laptop and walked downstairs to the basement. At the foot of the stairs, he could hear the six teenage runaways he had chained to the water pipes whimpering in the cold darkness. He flipped on the bare red bulb hanging from the ceiling and the startled youths suddenly sucked in their breaths with a start.

"P-p-please mister! Ya gotta let us go!" gasped a shivering long-haired boy in torn jeans and a black Struedleyouth T-shirt. The reviewer walked over to the liquor cabinet and poured a shot from a bottle of single-malt scotch, a Hanukkah present from a turntable manufacturer.

"Do you children KNOW who I just spoke with?" he asked no one in particular, staring beyond the bottom of his shotglass into the swirling maelstrom. There was no answer. "MIKE BARTLETT. That's who. Does anybody here know who MIKE BARTLETT is?"

A sniffling, haggard girl with peroxide-blond hair cleared her throat. Tears cut clean paths down her dirty cheeks.

"M-mister . . . I know who that is . . . i-i-if you let me go, I can t-tell you . . ."

The reviewer didn't hear her.

"MIKE BARTLETT is a man who just told me I wasted a MONTH of my LIFE!! It's GONE!! I CAN'T GET IT BACK!!" the reviewer suddenly shrieked at a redhead girl in an oversized man's coat. The girl closed her eyes tight and began sobbing, flinching at every syllable.

"No amount of money in the WORLD can get that month I spent listening, comparing, and writing about the Rotel RCD-865BX BACK!! 1—1—"

The bound runaways exchanged uneasy looks as the reviewer guzzled his scotch with a growl, smacking his lips as he slammed the shotglass down on the table. When his shuddering stopped, he walked over and set the needle down on an old Rosemary Clooney record.

Come on a' my house, a' my house, I'm a' gonna give-a you caandy . . .

"MIKE BARTLETT," the reviewer laughed as he lifted a screwdriver off the hook on the pegboard, "is an Englishman!"

And all along the darkened street, not a sound was to be heard.

DAC IN THE SADDLE AGAIN

By now, it's no secret that one of audio's biggest values has been the hugely popular Rotel RCD-855 CD player; for only $400, it offered sound quality on a par with far more expensive gear, and provided countless tentative audiophiles with the perfect interim CD player during a period of almost daily digital breakthroughs. I don't know about you, but it seems to me like Bob Harley (in whose beard we trust) has been heralding a newest bestest digital processor in every issue of Stereophile for the past couple of years now! I'm not blaming my homeless RH, though; the Mark Levinsons, Audio Research, Thetas, Staxes, Wadas, and VITs have been battling it out for the title of Supreme Digital Leader with more stubborn inbred fury than a hundred Hatfields and McCoys, churning out ever-better gear almost faster than the chipmakers can cut their dies. So when Lewis Lipnick called the $400 Rotel 855 "the steal of the century" in Vol.13 No.7, a loud chorus of HUZZAHS! arose from the foxholes; finally, there was a cheap CD player that could hold its own with the big boys. Pow-er To The Pee-pull!

The Rotel was the right player at the right time; basically a standard Philips 16-bit machine with better parts and a beefier power supply, the 855 found a home in thousands of happy systems the world over. And when digital's buzzword became "Bitstream," Rotel was there with the $500 RCD-865BX, the 855's single-bit kissin' cousin.

But all was not well.

For starters, the 865 didn't sound as good as the 855. I found the unit TJN sent me along with the batch o' midpriced CD players I tackled in the February issue to be quite mediocre, not nearly as good as the multi-bit 855. In particular, I found the 865's bottom end to be pretty wimpy, even in comparison with the underdog $299 NAD 5425. Add in an overly aggressive midrange
and weak dynamics, and I was all ready to pan the poor 865 when “Lucky” Mike Bartlett called with the good news. Well shee-yit, I don’t particularly dig writing negative reviews anyhow; if the Rotel had been included in the February batch, that would’ve made the count three and three, and JA would’ve sent me the new Leo Buscaglia book I’d Hug Hitler to review instead of the cool-man ProAc Response 2 loudspeakers.

There was another problem with the 865, and with the 855 as well: they looked like something I’d built, and that’s no compliment! I mean, I’m hardly Mr. Blackwell, but even the el-cheapo Magnavoci and NADs have some styling panache; the flat black Rotels, with their white lettering and squared-off boxes, look decidedly dull next to most gear they’re mated with. So Rotel took the 855 and 865 to that “pre room” in the Emerald City where the Tin Man got chromed, Toto got deloused, and Ray Bolger got that bad-boy coif, and they gave both players a good old-fashioned country sprucin’. Gone is the white lettering; now it’s luxurious gold-tone! Gone is the smooth front panel; now it looks like expensive brushed black metal! Throw in a couple of racy ridged endpieces and slap on a daring red racing stripe under the disc tray, and the ugly ducklings become the Barbie twins. These players really needed a facelift, and Rotel’s snazzed ‘em up but good.

So why the changes in model numbers? In the case of the 965BX, it’s actually a total redesign of the 865BX, with the newer Philips SAA-7323 Bitstream DAC replacing the 7321 used in the 865, and a better power supply. And the 955AX? It wasn’t broke, so Rotel has wisely chosen not to fix it; aside from the improved cosmetics, it’s still the same lovable 855 on the inside, right down to the Ol’ Faithful SAA7220/TDA1541A 16-bit Philips chipset. In a world where Bad People are free to go and change venerable staples of life like Campbell’s Tomato Soup, Coca-Cola, and the famous Fisher-Price kiddie scooter, it’s comforting to know that some classics are respectfully left alone.

AH HAY-YUHV AWLWAZE

1 And the very same DAC used in the oh-so-lush Sonographè SD-22; further proof that better power supplies = more music. Or that I subliminally associate the SD-22 with Mad Dog 20-20, the perfect end to a perfect evening.

DEPAYNDID AWN THUH KAHNDFISS UHV STRAYNJUHS

Speaking of whom, Mike Moffat just sent me Theta’s new DS Pro Basic II, the successor to the much-loved original Pro Basic Bob Harley praised in Vol.13 No.8. As nice as the Basic is, the II takes it all up a good peg or two (a “Follow-Up” is on the way). The Basic II served as the Big Daddy reference for the two Rotels, while the $400 Audio Alchemy DDE v1.0 was used as a benchmark unit in the Rotels’ general price range.

The rest of the system used to evaluate the Rotels was: VTL Deluxe 225 amps, Aunt Corey’s You Know What, Well-Tempered Record Player fitted with the Sumiko Blue Point cartridge, and the Audio Research SP-14’s phono stage. Cables were Straight Wire Maestro and AudioQuest Lapis, and Theta’s killer digital cable connected the players to the processors. The speakers were ProAc Response 2s (full review afoot you know it) mated with the mighty Muse Model 18 subwoofer, which melts into the ProAcs just as seamlessly as it does with the Spica Angeli. The ProAcs were bi-wired to the VTLs with Straight Wire Maestro, and all line-level gear was plugged into an Audio Express Noise Trapper Plus AC power conditioner. And Laura Atkinson bought me a beautiful 1992 calendar of vintage Elvis photos, which hangs proudly in my living room with big red El-Marko’d “SPHILE DEADLINE” messages on every twelfth day and “TRAFFIC COURT” reminders on all the rest.

ROTEL IT LIKE IT IS

First off, let me allay your fears concerning the 955; it is indeed the same exact player as the good ol’ 855, only with much better looks; so all you owners of worn-out 855s can come in off the ledge now. That’s great news, too, because most of the envelope-pushing that’s gone on in digital sound has been confined to the upper reaches of the high end; to my ears, cheap players don’t

2 Everyone, even the Kurds, had one of these; you know, that little white rig on wheels with the blue seat and handlebars so baby can get a taste for Harley’s Heritage Soft-Tail Classic. When I had mine, it was made of wood, but we just got one for my niece Casey, and the whole damn thing’s PLASTIC! What’s next?!! Is someone gonna tell me that Bert and Ernie weren’t just roommates all these years?!

3 My home life has kind of turned upside down lately; when I brought the ProAcs home, the Spicas packed their bags in a huff and went to stay with their sister in Waco. I’ll tell you all about it in the review, but it wasn’t pretty.

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sound any better than they did two years ago. And in the case of the newest generation of Philips/Magnavox players (soon to sport the Marantz name here in the States), they took a few steps backward, sounding distinctly inferior to the older CD50/60/80 series, in my opinion. To be sure, there have been some comers; both the JVC XL-Z1050 and the Sonographe SD-22 I reviewed in February are miles ahead of the pack, and NAD’s putting out some really cherry inexpensive CD players to boot. I understand the affordable new Creek player is a winner as well. But the cheap-to-midpriced CD arena is still mostly clogged with hazy, harsh, amusical dreck; as the high-end processors keep getting better in leaps and bounds, the average CD player is still pretty much where it was two years ago: Lamesville, daddy-o.

Enter the Rotel 955. With its “antiquated” Philips 16-bit chipset, it still wipes most of the sub-$1000 players out there, especially when married to high-quality interconnects. I found the 955 to get down equally well with the Maestro and the silver Lapis; the Straight Wire gave the Rotel an alive, detailed character, while the AudioQuest made for a much more laid-back presentation. These comments apply to switching the whole signal chain out with each type of cable; changing only the interconnect between the player and the preamp made for an audible but much smaller difference in sound. Overall, I preferred the sound with the system wired with all Maestro, as the Rotel seemed to open up more in terms of soundstaging.

To go into more depth with the 955 would be to step all over Señor Lipnick’s toes, as he’s already told you everything you need to know about the sound of the 855/955 in his July 1990 review. In short, the 955 is still a best buy in the sub-$500 CD player range, and one of the better values in all of audio period. The two years since the 855’s release have dated the player’s sound surprisingly little; only in comparison with the much-improved upper-echelon gear does the 955 show the rings around its trunk. For instance, LF found the gap between the 855 and the original Theta DS Pro to be much smaller than he expected; almost two years later, I found Theta’s DS Pro Basic II to be a huge improvement over the 955. The very small vestige of grain through the Rotel’s mid to high end is totally absent from the Basic II, which throws up an ambient soundfield that embarrasses many of the kilobuck processors, much less the $450 Rotel. This difference in difference isn’t the Rotel’s fault; it just shows how much better the new Basic II is compared to the older generation that LF used to compare the 855/955 with back in ’90.

And how does the 955 compare with the $400 Audio Alchemy DDE? Driven by the Rotel’s coax output, the lil’ DDE had a much brighter balance, but the overall character was a bit more “forced” than I like to have in my system. The 955 also handled dynamics much better than the Audio Alchemy, which tended to harden up on brash recordings. The Red Hot Chili Peppers’ BloodSugarSexMagik (Warner Bros. 9-26681-2) came across as much more listenable over the Rotel than the DDE, which made an already gutsy recording a bit too hard to take. The Audio Alchemy did, however, have sharper image focus, as well as a markedly better-defined bottom end. I think the DDE sounds more “hi-fi,” while the Rotel 955 sounds more listenable. If I had to choose one, I’d go for the Rotel. Actually, I’d probably go give blood every day for a month and spring the extra $400 for the delicious Sonographe SD-22, but I hate needles.

**And what of the RCD-965BX, you query?**

Well, let me draw a line across the middle of the room, okay? On one side of the line, all the people who: a) equate the word “latest” with “better”; b) equate the words “more expensive” with “better”; and c) mostly listen to Audiophile-Approved CDs, and usually only halfway into the tracks as well, cuz there’s this other disc, see, that’s got the most INCREDIBLE bass on it, you’ve gotta hear it NOW baby, it’ll flap yer pantlegs just like RH-JA-CG-MIC-KEY-MOUSE sez; everyone who fits this description, stand there.

On the other side, the one closest to the fridge, let’s have all the people who: a) dig music; b) dig gear that lets them dig music as easily as possible; and c) dig listening to albums all the way through, because that’s the only way you get to dig all the music, hot diggity-doo.

The first group of people will prefer Rotel’s 965. It’s their latest player. It costs $100 more than the 965. And sound-quality wise, the
965 packs a pretty good wallop in the short term, which is just fine for people who only listen to certain tracks that show off bass, cymbal crashes, inner liquidity, etc. You know, the important stuff; the stuff your Audiophile Socialite friends want to hear when they drop by Sunday afternoon to play mind-games over whose system's sounding the best lately while the wife's upstairs watching a Jean-Claude Van Damme kickboxing movie on cable. The men in this category also like to pay complete strangers $300 so they can go off in the woods, get butt-nekkied, and beat on animal-skin drums instead of staying home and watching their wives fantasizing over the aforementioned CVD.

The second group, which I like to refer to as Sixty Minute Men, share a lot of common ground. We've all read Sun T'zu's *The Art of War*. We had strong, sensitive fathers, who taught by example that a man is comprised of both animus and anima, and that to shunt the feminine side to ground only results in lifelong frustration and a job with the postal service. And because we Sixty Minute Men are so in tune with our monkeybones, we all tend to be voracious lovers of music, that most sensuous of all art forms.

And what does the Sixty Minute Man look for in his Hi-Fi? He looks for gear that approaches life as he does: with supreme economy of extraneous, forward and linear motion, and paucity of uncontrolled aggression. The Sixty Minute Man wants a hi-fi rig that sounds mellow with Wes Montgomery, fiery with Hendrix, and righteous with Pops Staples. He doesn't want to hear the system at all, in fact; he wants to hear music.

The Pop-Guns, however, want WOW! AND HOW! RIGHT NOW! Highest highs! Lowest lows! More detail than a billion Waldo cartoons!

"See!? You can hear Ronnie Gilbert's kids playing patty-cake backstage on the Weavers disc MUCH better than with my old cartridge!! See?!!"

"Hear ye, hear ye! All Active Voting Commodores in favor of restoring Bill's Westfield Audiophile Master Race membership: don your fez and mewl like a marmoset . . ."

To these hi-fi nuts, the Rotel 965 will be a hot number. Because at first listen, it just leaps right out at you! The detail's right there, *all of it*, thrust right out like a fighting cock's talons. "I never heard that doubled vocal on Adrian Belew's '1967' sound so *distinct* before!" you marvel, awash in all the little micro-nuggets of sound shoved right in front of your puss. The 965 pins you right back into your seat with a forceful, upfront character; there's nothing subtle about *this* Rotel.

And that's the problem.

After spending so many months with a brace of mid-priced CD players, I've come full circle in my tastes *vis-à-vis* digital on the cheap. Having lived with the Theta DS Pro Basic for so long, I've grown accustomed to its superior resolution, its outstandingly clear soundstage focus. The Basic extracts an amazing amount of detail from CDs, and once you get used to hearing all these little "cues" all the time on a subconscious level, going back to a cheap player is a real shock. So when I first heard the Audio Alchemy DDE, I dug the hell out of it; here, finally, was a cheap DAC that had the detail of the big boys! I'd hook the thing up and marvel at how close the little DDE came to the detail retrieval of the Theta.

Then I got a pair of the Grado headphones. Want to mess up your mind real bad? Get you a good headphone amp? Melos's for instance, and listen to the direct sound of the Rotel 955 and 965, the Audio Alchemy, and the Theta (or Wadia, Krell, VTL, etc.). *Nowhere to run to, bay-bay, nowhere to hide!* It's unnerving. Because under the Grado microscope, the differences between the various players and processors are magnified 10x.

So what did I hear? The best-sounding was the Theta Basic II, no question. *Wasn't even close. Shouldn't be*, at $2000 vs $400–600. But I've got to tell you, the next best thing was *not* the Audio Alchemy. Not the $550 965, either. No, the closest-sounding of the bunch was the $450 Rotel 955; the same ol' player that's been around for years! The 955 is laid-back, for sure, but that's how cheap gear SHOULD sound! Once you take away high-quality (read: expensive) power supplies, 4 "There'll be fifteen minutes of kissing! Honey please don't stop (don't stop)! There'll be fifteen minutes of teasing. / Fifteen minutes of squeezing. / And fifteen minutes of blowing my top! (top! top! top!)/ If your old man ain't treatin' you right, / Come up and see ol' Dan, / I'll rock you and roll you all night long. / I'm a, Sixty Minute Man, uh-huh, / Shiiiiii, Xtreeme. / Miiiiii, Nuuuuud. *uuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuuu
premium passive parts, and brute-force engineering, the game has changed; you're not playing "Let's get as close as we can to the innate sound of this amazingly musical circuit" anymore, you're playing "Should we spray this pit with Right Guard or Arrid Extra-Dry?"

The 965 falls behind the 955 in two major areas. For starters, it's very quick to harden midrange and treble textures during dynamic peaks; when the going gets rough, the 965 gets rougher. JA's Chopin piano recording on the Stereophile Test CD is a great example of this, and why I use this particular cut so often when evaluating gear. The piano's attack comes off as too hard with the Rotel 965 and the Audio Alchemy, while the Theta and the 955 give a much more realistic and clean rendering of the striking keys. With the 965, I winced every time Anna Maria bash ed her Steinway; same with the Audio Alchemy. In fact, the 965 sounds very similar to the DDE to me; they're both cut from the same bold cloth.

The second complaint I had with the 965 was with its tonal balance; with its overly lean bottom end and forward midrange, the 965 is a strikingly different-sounding player from the 955. I actually found myself going over to turn the Muse's WOOF control up whenever doing extended listening with the 965. The Commitments soundtrack, played on the 965, became a much tamer piece of music, with much less sense of rhythmic pace than through Rotel's 955. Watch the measurements reveal a flat response to below 5Hz, but the 965 has a distinctly lacking bottom end, just like its daddy, the 865.

"Geez, CG, does the 965 suck?" Hell no! It's actually got a few things going for it. There's that detail, for instance; that should turn on quite a few audiophiles. And the midrange, aside from the congestion during musical peaks, is quite clean and clear. Low-level detail is terrific for the bucks, too. But to be honest with you, I much preferred the overall sound of the 955 to its more expensive brother; it was just a lot more musical in the long term.

Conclusion

The two new players from Rotel offer very different sonic signatures, for sure. I much preferred the ease and musicality of the multi-bit 955. Rotel had a winner with the 855, and they've wisely kept it in the line as the better-looking 955. I don't know of any comparably priced CD player that offers as well-rounded a sound quality as the Rotel 955, so it stays in Stereophile's "Recommended Components" as my first choice in a sub-$500 high-end CD player.

The Bitstream 965 will definitely have its share of fans. Sure it's a hackneyed cliché by now, but go audition them both, in your system, for longer than just a few tracks on the three Audioweenie Demo Discs you schlepp to the hi-fi huts when you've got that Buyin' Fever. The 955 and 965 sound different enough that you'll probably love one and hate the other. Try to take my criticisms of the 965 in context with my praise for the 955; believe me, you could do a LOT worse for $550 than the 965!

And if I had $550 to spend? I'd buy the $450 Rotel RCD-955, throw a shine on my Justin's, and take my girlfriend out to the best restaurant in town. And after dinner, we'd come home and I'd turn the lights down low while we listened to the Neville Brothers' Treacherous (Rhino R2 71494) on the 955, bathing in deep bayou funk. Then I'd give her the $90 worth of ooh-la-la underwear I bought her, because in Austin, TX, the best restaurant in town is Sam's BBQ, and they don't take American Express.

TJN Measures

RCD-955AX: Beginning with the multi-bit Rotel, the frequency response (fig.1) was virtually flat across the audible range, with only a small amount of ripple in the upper octaves—ripples characteristic of machines using Philips digital filters. The 1kHz squarewave in fig.2 is also typical of players using linear-phase digital filters, and although pre-emphasized CDs are in the distinct minority, the virtually flat de-emphasis response (not shown) guarantees that they will be properly balanced in playback.

The crosstalk from the left to the right channel is shown as the top curve in fig.3; the right-to-left crosstalk is the bottom curve. The separation indicated here is not exceptional, but unlikely to be audibly significant.

Fig.4. the spectrum of the RCD-955AX reproducing a -90.3dB dithered tone at 1kHz, shows some negative deviation from linearity but no significant artifacts other than a hint of third-harmonic at 3kHz. The linear-
ity is more clearly shown in fig.5, where the deviation at ~90dB is just under 2dB. Only the right channel is shown; the left was virtually the same. Listening to the fade-to-noise with dither signal from the RCD-955AX produced only one or two minor whistles at what I would estimate to be well under 80dB. They were well below the primary tone in level. The overall linearity of the RCD-955AX is very good for a multi-bit player in this price class.

The noise spectrum of the player’s output when playing a “digital silence” track in fig.6 has no artifacts worth noting. It is worth noting, however, that we’ve recently become aware that some players are designed to actually mute the output of their D/A converters.
when presented with an all-zero digital signal—a practice which enhances their measured S/N ratio. That might be the case here; the measured spectrum (not shown) with the player in Pause was virtually identical to that in fig.6. In any event, this figure does show the noise contribution of the analog stages to the output to be negligible.

Fig.7 shows a 1kHz, undithered tone at -90.31dB from the 955. The desired stairstep sinewave is evident, though the nearly inevitable noise makes interpretation difficult. And in fig.8 the response of the 955 to a 19 + 20kHz, 0dB signal shows no significant IM artifacts. The aliasing tone at 24.1kHz is commonly seen in players using Philips technology; the relatively slow-slope filter in these machines—a plus for a number of reasons—cannot completely eliminate this tone. It would only be a potential problem when used with an amplifier having marginal high-frequency stability.

The RCD-955AX is non-inverting at its analog outputs, neither of which had measurable DC offset. Its output impedance is just over 198 ohms on both channels.

**RCD-965BX:** As in the RCD-955AX, the 1-bit Rotel had a rather typical Philips-chipset frequency response, with a trace more HF ripple than in the multi-bit player (fig.9). The ripple in both machines should be audibly insignificant, however, and the relative frequency responses of the two Rotels do not—at least in spectral terms—explain CG's relative reactions to the two players. The squarewave in fig.10 is a near-clone of that from the multi-bit Rotel, including the obvious presence (from the shape of the "ripple" on the horizontal portions of the waveform) of a linear phase filter. The de-emphasis response is marginally better than that in the 955.

The crosstalk shown in fig.11 (left to right top, right to left bottom) is, again, considerably higher than we have measured from many players. But it's still unlikely to result in any audible degradation or loss of separation.

The most notable things about fig.12—the spectrum of the 965 decoding data representing a -90.31dB, 1kHz dithered tone—are the power--supply noise at 120Hz and 240Hz and the artifact between 7kHz and 8kHz. When I listened to the fade-to-noise with dither signal, both the low-frequency noise and the high-frequency whistle were audible, though only when played at levels far higher than needed for any conceivable program material. The actual fade-to-noise signal seemed to be free of artifacts. But the '965AX's relatively higher noise floor made it difficult

![Fig.9 Rotel RCD-965BX, frequency response (right channel dashed, 0.5dB/vertical div.).](image)

![Fig.10 Rotel RCD-965BX, 1kHz squarewave at 0dBFS.](image)

![Fig.11 Rotel RCD-965BX, crosstalk (10dB/vertical div.).](image)

![Fig.12 Rotel RCD-965BX, spectrum of dithered 1kHz tone at -90.31dB with noise and spuriae (1/8-octave analysis).](image)
Fig. 13 Rotel RCD-965BX, right-channel departure from linearity (2dB/vertical div.).

Fig. 14 Rotel RCD-965BX, spectrum of silent track, 30Hz–20kHz (½-octave analysis).

to precisely determine the quality of the tone at very low levels.

The nonlinearity of the -90.31dB tone shown in fig.12 is less apparent in fig.13, where it remains within 1dB down to -100dB. The right channel is shown; the left was only marginally worse. The noise spectrum to a digital zero signal in fig.14 also duplicates the same noise seen in fig.12. For reasons discussed in the RCD-955AX measure-

Fig. 15 Rotel RCD-965BX, undithered 1kHz sinewave at -90.31dB.

Fig. 16 Rotel RCD-965BX, HF intermodulation spectrum, 300Hz–30kHz, 19 + 20kHz at 0dBFS (linear frequency scale).

measurements, this plot appears to tell us more about the noise of the analog stages than that of the digital section.

The waveform of a ~90.31dB, 1kHz undithered tone (fig.15) is obscured by noise and is kinked by the power-supply noise present. And the same comments made about the 19 + 20kHz signal in the multi-bit Rotel could also be repeated in discussing fig.16—though the aliasing tone at 24.1kHz is slightly lower in level in the 1-bit player measured here.

The RCD-965BX is non-inverting at its outputs, which had zero DC offset. Its output impedance measured 200 ohms from both channels.

—Thomas J. Norton

### Panasonic Prism LX-1000 Multi-Disc Player

**Thomas J. Norton**


The letter we received was innocent enough. It asked for our recommendations on laser-disc combination players. You know, the ones that play all of your optical, laser-read enter-

Stereophile, March 1992
references to features, followed by an admission that we had, collectively, no firsthand experience with these all-purpose devices. Only a few members of our staff have any interest in video stuff—monitors, surround-sound, and the like—among them JGH and yours truly.

Knowing our readers to be quick to respond—negatively—whenever something related to video appears in these audio-dedicated pages,1 that's where the matter would have remained had reports not begun circulating concerning the possible advantages of using videodisc transports for playing back CDs. Theta has chosen just such a device—a Philips-based player modified by Theta—as their dedicated transport (see RH's review in Vol.14 No.11). But the Theta Data is expensive; how, we wondered, would an off-the-shelf combination player perform as either a self-contained CD player or a transport?

Thus the present review, of a combination player from Panasonic, a machine at the top of its manufacturer's line.2 The main thrust of this review was to evaluate the audio performance of this machine. But I will not ignore its video playback capabilities. The latter, in fact, was the first item on the test schedule. Why? Because, unlike the Theta transport (which retains its video play facilities), this player is promoted as an all-purpose laserdisc player. If it turned out to be an absolute knockout as either a CD player or a transport, of course, that would be significant. But I assumed that anyone purchasing a machine like this would also demand at least acceptable video performance and video sound. Therefore a video check was established as a first hurdle over which this unit should pass before its audio capability would be assessed.

**The Prism**

In the US, Panasonic's best audio equipment has always worn the Technics badge. The Prism multi-disc player would, in all likelihood, be a Technics unit if the latter division were in the video business. Like virtually all Japan-sourced video equipment, it has a bazillion features. Most of them, in this case, are useful. Besides the expected ability to play all forms of laserdiscs, the Prism will also automatically play both sides of laser-discs in succession; side changing takes only

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1 Though usually only when the product is perceived to be video only, monitors. We will continue to cover sound-for-video topics and products on occasion, such as the Snell/Le-
icon home THX system which JGH is currently auditioning.
a few seconds—faster than any manual turnover. This isn’t just a sop to the couch potato in most of us; many films suffer from any interruption, and no laserdisc plays for over an hour per side, give or take a few minutes.

Most of the controls on the player itself are located on a drop-down panel below the loading drawer; when this panel is closed the front face of the player is clean, user-friendly, and—for videodiscs in any case—provides the most frequently used controls. This includes a jog-shuttle knob, which operates in either CD or videodisc playback. This control is duplicated on the (full-function) remote, which also includes a number of controls not found on the front of the player—including switching between the analog or digital audio tracks of newer videodiscs (which invariably have both).

The back panel of the Prism provides two sets of audio and video output jacks. The digital output is optical only (of the more commonly found Toslink variety, not AT&T). An S-Video output is also provided. There is no RF output for feeding a television which lacks a separate video input. Its designers have evidently assumed (rightly, I think) that the Prism will be used, as a minimum, in a moderately high-end video system, which should have one or more dedicated video inputs.

The LX-1000 also incorporates a digital time-base corrector which helps to minimize horizontal and vertical picture distortion and, according to Panasonic, eliminates jitter (they’re talking video jitter here, not jitter in the digital audio signal). The S-Video output separates the Y (luminance) and C (color) signals using a digital comb filter. Digital memory also provides for still and slow-motion capabilities with all videodiscs, not just the less common (and generally more expensive) CAV titles.

The main audio feature of the Prism, which is not really news these days, is the incorporation of MASH (low-bit) conversion for all digital playback. When first introduced about a year and a half ago, however, the Prism was one of the first—if not the first—combination player to make use of this technology.

The Prism has one other feature I’m not certain I like. If unused for about 30 minutes, it automatically switches off. It’s not possible, therefore, to leave it turned on all the time—a common audiophile practice.

**Video Performance**

I found the LX-1000’s video performance to be nothing short of outstanding. It was evaluated over a Sony 25” Profeel monitor which, though now ten years old, has held up remarkably well and still provides a sharp, bright, well-defined picture. Which is exactly what the Panasonic is capable of sending to it, given the best program material. The Prism’s picture, while it has a shade less subjective snap and crispness than the similarly priced Pioneer CLD-3090’s, has more fully saturated colors and less (and very low) video noise.

Our first sample of the Prism, however, did exhibit a troublesome problem with certain CAV discs. The discs would play nearly to the end of the side, then the picture would freeze up or otherwise jump and jitter and fail to make forward progress. This happened with Reference Recordings’ Video Standard test disc, and _Flyers_, a Philips disc which is a transfer of an original IMAX presentation. Sides 3 and 4 of the Criterion CAV version of _Close Encounters of the Third Kind_ also gave some problems; side 4, in particular, had a nasty breakup near the end, which also resulted in rather alarming sputtering and transients from the audio track.

At this point I requested and received a second sample of the Prism to determine if the above problems were player-related. All discs tried played properly on the second sample except those from _Close Encounters_. The problem on side 3 was limited to a single minor glitch where the player entered pause (and

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3 This type of output is of less significance in a laserdisc player than in an S-VHS video recorder. In the latter, the two signals are recorded separately; keeping them separate all the way to the monitor circuits (and eliminating the need for the latter to separate them) may enhance picture quality. On a videodisc, the two signals are already combined in the recording. They must be separated on playback at some point, but whether this is done in the videodisc player or in the monitor is rather irrelevant. If your videodisc player provides better separation circuits than those in the monitor, you may get better picture quality by using the S-video outputs. If it doesn’t, you won’t. All of this presumes, of course, that your monitor also has an S-Video input. Some, like mine, don’t; I used the standard video outputs in my video assessment of the Panasonic player.

4 CAV stands for constant angular velocity, often referred to as standard play on the disc jacket. The more common “extended play” discs are CLV, or constant linear velocity. CAV discs provide 30 minutes per side and rotate at a constant 1800rpm. Until the advent of players with digital field memory, only CAV discs would provide slow motion, freeze-frame, and other so-called special effects.
released normally on pressing Play). The breakup on side 4, though, was almost as severe as on the first sample. However, a glitch also appeared at the same point (near the arrival of the mother ship—not exactly an insignificant scene) when played back on an old Pioneer LD-1100. The problem was, apparently, in the disc. A number of other CAV discs played without difficulty. In the one report I’ve seen of a similar problem with the LX-1000 which actually could be attributed to the player itself, the problem was fixed by a Panasonic service center with a minor adjustment.

Two other reports of which I’m aware, including a review in another magazine, have criticized the LX-1000 for having “herringbone”—patterned video noise in its picture. I only encountered an artifact anywhere at all like this in two isolated spots on two discs—of a large number sampled—and then it only affected small and specific parts of the picture for a few seconds; in my opinion this was in the disc itself. A full-screen herringbone pattern never occurred on either of our LX-1000s, but since others have experienced it, it may be a possible problem in some samples.

**SOUND**

The reference audio system used in the CD evaluations consisted of the Rowland Consummate preamplifier, Krell KSA-250 power amplifier, and Apogee Centaur Major loudspeakers. (My review of these loudspeakers will appear in the April issue.) Interconnects were AudioQuest Lapis (the next to the latest generation) from CD player to preamplifier, and Cardas Hexlink from preamplifier to power amplifier.

As a preface here, I would like to make only one comment on the sound of the LX-1000 with respect to its playback of video discs. It never gave me any reason to complain, given the limitations inherent in most such program material, and indeed it was frequently first-rate, again given the program material. But I did notice that I subtly but consistently preferred the sound of the analog soundtracks over that of the digital from the same discs. While the analog did appear to be very slightly louder much of the time—which certainly may have tipped the subjective scales in its favor—I don’t believe that was the only difference I was hearing. The analog tracks almost invariably sounded more open and airy, the digital just a bit canned and closed-in, in comparison. Since the surround-sound setup currently in use with my video system is the modest (but nonetheless surprisingly effective) Atlantic Technologies Pattern system, I also played a few selected videodiscs—sound only, of course—over the audio system specified above, which was to be used in evaluating the LX-1000 as a CD player and transport. My preference for the analog tracks remained.

I should add, however, that the digital soundtrack on videodiscs will almost invariably have a greater low-end extension below about 35Hz (most analog tracks have little below 40Hz), and neither playback system used here—the Pattern especially—will really rattle the rafters much below that frequency. The digital tracks were also generally quieter, though this was almost never a significant advantage in actual use. I noted a rare tendency for brief, intermittent burbling sounds from the analog track of some discs, but this didn’t happen often enough to be disturbing or to make me want to switch over to the digital track.

On to the feature attraction: How does the Prism stack up as a CD player? Anyone expecting from the Prism CD sound quality that sounds like an afterthought will be surprised. If the sound falls short of the state of the art in CD playback (it does), it still wouldn’t be out of place in a high-end system. I’ve begun to expect certain sound qualities—positive and negative—from so-called 1-bit players, and I was not surprised by the Prism’s sonic signature. It was easy to listen to, not offensive in any way, with a good sense of depth and three-dimensionality. The low end was deep and extended, the midrange slightly forward with believable sonic weight and timbre, and the high end reasonably detailed but just slightly soft and lacking the ultimate in inner definition and focus. This last may be said, in fact, about its reproduction of much of the audible spectrum—there was a certain “lazy” quality to the presentation. Martin Colloms has referred in many of his reviews to “pace” and “rhythm” and I have little doubt—that I find the pace/rhythm metaphor too easily misinterpreted—that we are talking about the same thing here: in this case, a reduction of these qualities.
But while I’ve been disappointed in a number of 1-bit players for displaying this same characteristic, I found the Prism LX-1000 to have other qualities which more than compensated. Without direct comparison with a “faster”-sounding player, Clark Terry’s Live at the Village Gate (Chesky JD49) sounded lively and open through the Prism, not obviously softened in any way. The reproduction of depth in this live recording was impressive. As it was on The Pugh Taylor Project (DMP CD-448), a quirky but stunningly recorded jazz recording, which also had fine clarity and a sharp attack—all without any hardness or harshness. Both of these recordings are inherently immediate, punchy, and sharply defined; if the Prism was subtracting any dynamics or punch, it was not at all obvious on either of them. Further listening on a wide variety of recordings did, however, indicate a certain softness in the Prism’s sound. The transient attacks on Jennifer Warnes’s Famous Blue Raincoat (A&M YD 0100/DX3182) seemed subtly slowed—the sock of the kickdrum leading off “Bird on a Wire” and the tinkle of the bells at the start of “Joan of Arc” lost, respectively, a bit of their leading-edge impact and sparkle. The same was also evident on Jay Leonhart’s double bass on Salamander Pie (DMP CD-442).

But this same recording also demonstrated the Prism’s finely balanced vocal reproduction. In fact, the Prism’s midrange reproduction in general was liquid and palpable, with a believable sense of three-dimensionality and well-rendered vocal and instrumental timbres.

Though the Prism’s low end definitely leaned to the soft and expansive rather than the fast and tight, it was nevertheless convincing and well extended. My notes on listening to well-recorded organ recordings noted “big instrument, big space,” and while I commented that the Audio Research DAC1-18 (to which the Prism was briefly compared) bettered the Panasonic player in air, depth, and tautness, the Prism had more potent low-end extension.

When it came time for more detailed comparisons, I chose to face the Prism off against both the new California Audio Laboratories System 1 processor (using the latter’s multi-bit Indus plug-in module) driven by the CAL Genesis CD player (used as a transport with CAL’s Toslink fiber optic cable), and JVC’s XL-Z1050TN. The former was chosen both for its multi-bit design and to see how the Prism player compares with a more expensive, dedicated high-end processor, the JVC because it was recently highly rated in CG’s review of five modestly priced designs (Vol. 15 No. 2). The JVC is considerably less expensive than the Prism, but since the latter also includes extensive video capabilities, it seemed reasonable to expect that its natural competition in a CD-only player might be inherently less expensive. By “sandwiching” these two comparisons, I hoped that additional information about the “real” Prism would emerge.

Squaring the Prism off against the CAL did not overly flatter the less expensive Panasonic. Listening first to the Prism playing the Kronos Quartet’s In Formation (Reference Recordings RR9CD) produced a tight, defined sound from this sharply focused Keith Johnson recording. Attacks were crisp, the overall balance convincingly real. Nothing was obviously out of place, with the possible exception of a trace of harshness to the percussion punctuating band 6, “Joan’s Blue.” Moving to the CAL System 1, however, was a distinct step up. Percussion was more dynamic, more detailed, and yet at the same time sweeter. There was a greater sense of air surrounding the individual instruments. While I had not been particularly troubled by any “slowness” in the sound of the Prism, the CAL clearly sounded “faster.” Background hiss (likely originating from the analog master tape) was more apparent with the CAL, though not intrusive. The Prism appeared to be clearly less “driven,” softer, less detailed and transparent; in short, it seemed to be retrieving somewhat less information. These impressions held up on other material. Danse Royale by Ensemble Alcatraz (Elektra Nonesuch 79240-2), an early-music compilation, was more open, spacious, and defined through the CAL combination. In comparison, the Prism just did not quite come to life.

Yet the Panasonic held its own within these limitations. It remained unflappable, not in any way out of place in this rather high-end system. Still, were it only a CD player, I would have to rate it very good but overpriced. The ability to play back videodiscs (and play them back superbly well) is not a throw-in feature; it does cost something.
In the second comparison, the Prism, in my judgment, ultimately bettered the JVC as a CD player, but neither dramatically nor consistently. Listening to the JVC first, my initial reaction was that it was a good player which, much as had the Prism, quite clearly shared many of the strengths and weaknesses I have begun to attribute to many 1-bit machines: clean and slightly soft, and no spit or sizzle in evidence, but missing a degree of focus and inner detail (not an insignificant loss, but not carried to an alarming degree either). There was, at the same time, a small degree of dryness to the top end which added enough crispness to the sound to keep the reduction of inner detail from becoming too obvious, and a slightly lean quality to the low end which also enhanced its subjective definition. The latter was very apparent on Michael Murray’s organ work in Franck’s Fantaisie in A (Telarc CD-80096). The JVC came out on top in its reproduction of inner clarity here, but the Prism was the clear winner in low-end extension and weight. And though the latter was subjectively softer in sound than the JVC, it produced a more convincing sense of air and space.

While the JVC did produce the tighter, punchier sound—on Famous Blue Raincoat, for example, it did a better job in conveying the urgency and forward drive of the music—the Prism’s superior sonic weight better reproduced the overall majesty of symphonic recordings. On Nordholm’s Symphonic Fantasy and Symphony 5 (Kontrapunkt 32005) the Panasonic provided the greater sense of depth (both LF and spatial) and power. Although the JVC sounded tighter overall, and more obviously detailed, the Prism won out in the reproduction of timbre; woodwinds, in particular, were just a bit too lean and lacking in liquidity through the JVC. The same, ultimately, proved true of voices.

The Prism won out here by virtue of its more fluid sound, but the JVC was by no means a poor second. The reference system used in the auditioning leans to coolness; through a system with a richer, warmer inherent sound, the JVC might well have edged out the Panasonic. And with the price difference figured into the balance, I would not choose the Prism on the basis of its CD performance alone. Your need (or lack of same) for its video features should be the deciding factor here.

And what about the Prism as a transport, using its digital output to drive an external processor? Recall that the LX-1000 is equipped only with a Toslink optical digital output. Using this for the digital feed, I drove the CAL System 1 processor (with the same Indus multi-bit plug-in module referred to previously). The digital link was CAL’s own optical cable. For comparison, I again used the CAL Genesis CD player as a transport.

The Prism went about its job in a very respectable fashion, but in no way demonstrated any particular qualities which would add fuel to the fire indicating any sort of generic superiority of laserdisc players when used as CD transports. The Genesis out-scored it in most respects, sounding cleaner, more liquid, less grainy. At first it appeared that the Prism-as-transport was retrieving more detail, but it soon became apparent that a slight added brightness from the Prism was the cause; the Genesis-as-transport was more fluid, less obvious, and more convincingly right. But the differences were in no way dramatic, leading me to speculate that the inherent quality of the digital output circuits may have been as much the deciding factor here as the transports themselves.

I should also mention one other aspect of the Prism’s performance when used to play CDs, either as a stand-alone player or as a transport. It is comparable in mechanical operating noise to a good CD-only player. Some laserdisc players (particularly early models) were barely marginal in this respect. This is not a concern with the Prism.

Despite the above observations, the Prism definitely worked well as a transport. But I would not purchase it only to perform that duty.

One other matter should be addressed here as well: access time. When RH reviewed the Theta Data, he commented on how slow the startup and access time was on that machine, compared with a “real” CD player. The same is not true of the Prism, at least not to the same degree. It took about eight to nine seconds, beginning with an open, loaded drawer, for a CD to begin play in the Panasonic. The same test with two typical CD players resulted in startup times only two to four seconds faster. And the Prism skipped from track to track fairly rapidly—two or three seconds. While a bit slower than a dedicated
CD player, its access speed is neither a serious drawback nor an annoyance.

MEASUREMENTS

The LX-1000's frequency response (fig.1) is virtually flat across the audible range, with the exception of an in­significant rise above 12kHz. The only anomaly I noted is a rather unusual channel mismatch of about 1.2dB (most CD players we've tested have been more closely matched). In fig.2 the squarewave response displays the small degree of ripple typical of players with linear-phase digital filters. The Prism's de-emphasis response (fig.3) resembles the frequency response of many moving-coil phono pick­ups, with a slight dip in the mid treble and rise at the top—though the deviation in most such pickups is several times larger. The small degree of these deviations, however, is un­likely to be of audible significance here, par­ticularly since most CDs do not make use of pre-emphasis.

The crosstalk in fig.4—nearly the same from left to right and right to left—while not the best we've measured, is definitely a solid average. That's not a criticism; average crosstalk in CD players in general is excellent in any audible, real-world sense. In fig.5, the output spectrum of the Prism reproducing a -90.31dB, 1kHz dithered signal is shown. The curve indicates good linearity at -90dB and no significant artifacts or power-supply-related noise. The overall linearity shown in fig.6 is outstanding. Only the left channel is shown; the right channel is identical down to -100dB and differs below that only in the distribution of the inevitable low-level noise. The fade-to-noise signal was audibly clean, with no artifacts as the signal dropped into the noise floor.

In fig.7 is plotted the noise spectrum of the Prism in response to an infinity zero signal. The only artifact worth noting is the power-supply noise at 60 and 120Hz, and then perhaps only because it is so low as to be negligible. It has, however, recently come to my attention that many Japanese-designed 1-bit converters are configured to switch off when they detect such a signal; the noise shown here will, in this case, merely indicate the noise in the player's circuitry beyond the conver­ter.

The response to a -90.31dB, 1kHz undi­thered signal shown in fig.8 displays a rea­sonable resemblance to the desired stairstep response, overlaid—as in almost all of the players we've tested—with low-level noise. The intermodulation response of the Prism to a 19 + 20kHz signal (fig.9) is clean, with no significant artifacts.

The Prism inverts polarity. Its output impedance is 580 ohms from the left channel,
593 ohms from the right. And its DC offset measured a negligible 1.1mV from both channels.

CONCLUSIONS
The Prism, as a CD player, is sonically competitive with other good-quality 1-bit machines, but it sells for several hundred dollars more than most of them. The difference in price buys you an undeniably first-rate (with the caveats noted) videodisc player. Its CD playback certainly competes strongly with the players listed in Class C of Stereophile's "Recommended Components." It is rather expensive for this class, so I would hesitate to recommend it as a CD player or transport alone. But there's more involved here, and if you need a good CD player and a superb videodisc player in one package, the Prism is not likely to disappoint.

PIONEER ELITE SP-91D
DIGITAL SIGNAL PROCESSOR
Bill Sommerwerck

Digital and analog signal-processing system. Ambience-synthesis models include: Concert Hall (4 models); Recital Hall (2 models); Jazz (4 models); Disco (2 models); Rock (2 models); Theater (2 models); Church; Stadium; Studio; Simulated Surround (2 models); Delay. Dolby decoding includes Dolby Pro-Logic (Normal, Wide, and Phantom) and Dolby 3-Channel Logic, for use when rear speakers are not available. Digital EQ with seven fixed bands, ±12dB. Input sensitivity: 150mV. Input impedance: 4k ohms. Output level: IV. Output impedance: 1k ohms. Disortion 1kHz: front (not using Dolby Pro-Logic): 0.002%; processing front, rear: 0.006%. Frequency responses: front (not using Dolby Pro-Logic): 5Hz-100kHz, +0/-3dB; processing front, rear: 20Hz-20kHz, +0/-3dB. S/N ratio (IIH, input short-circuited, A weighting) 2V rms: processing front, rear.
The Lexicon CP-1 was the first consumer audio product to incorporate digital signal processing (DSP). Although there were a number of digital ambience synthesizers prior to the CP-1 (most notably from Audio/Pulse, a/d/s/l, and Yamaha), they did not, strictly speaking, process the signal. Rather, they digitally synthesized ambience from the input, but otherwise left it unmodified.

The CP-1 was the first to actually tamper with the source. It performs image enhancement and acoustic-crosstalk cancellation in the digital domain. It also remains unique in being the only DSP that performs Pro-Logic decoding digitally. The CP-1 was also the first processor to combine both ambience synthesis and Pro-Logic decoding in one unit. You didn't need to be Nostradamus to predict a flood of similar units from Japanese companies.

The Pioneer Elite SP-91D Digital Processor (whew!) is the first trickle in that anticipated torrent. The "DSP" designation is a slight exaggeration, since Dolby Pro-Logic is implemented in an analog chip set, not digitally. The SP-91D nevertheless offers a useful range of digital processing:

- Ambience synthesis. Six basic room types are modeled; some offer two or four variations.
- Ambience extraction. The rear channels can be set for delay-only, to extract ambience via the Haas ("precedence") effect.
- Mono enhancement. Creates (according to the manual) a "spacious sound" from mono sources.
- Digital equalization. Seven fixed bands, with 12dB of boost or cut. The reverb models have preset equalizations for the front and rear ambience channels.

The SP-91D lets you define your own ambience or equalization programs, with whatever settings you like. The memory that holds these settings is backed up with a lithium cell, so they aren't erased when you unplug the unit. (A lithium cell lasts three to five years. You should keep a list of your custom settings, just in case the cell conks out prematurely, or the unit needs servicing and the settings are lost.)

The SP-91D's DSP capacity is relatively limited. You can't use digital EQ for the front channels and synthesize ambience at the same time. (The now-discontinued Sony TA-E1000ESD let you select any combination of digital EQ, ambience synthesis, and dynamic processing.)

**DISPLAY**

As with many microprocessor-controlled products, the SP-91D offers so many features that the front panel has only enough space for controls to operate the basic functions. If you lose the remote, you're limited to setting the overall volume, changing modes, and selecting programs (either preset or user-defined). Without the remote, you can't set individual levels or modify any of the parameters (such as EQ, reverb time, etc.).

Like most other DSPs, the SP-91D uses a vacuum-fluorescent display. The display is rather small, but everything you need to know is shown. Most items are easy to read,

1 My criticism of the CP-1's slightly "solid-state" sound has perhaps overshadowed my appreciation for this product's importance. It is one of the most significant products in the history of consumer hi-fi. It points the way to future developments. See my article, "The Hi-Fi System of the Future," in Vol.12 No.1, January 1989, p.77.

2 The proliferation of remote controls for any- and everything resulted in the appearance of "learning" remotes, ca 1983. Although I have one (a CORE, from CLJ), I leave all my remotes on top of the TV and select only those I need for a particular listening session. A learning remote, however, does make an excellent backup for those products lacking full sets of front-panel controls.
but the level display for the ambience channels is rather cramped. Not only are the numbers small, but the annunciators that indicate which level is being shown are even smaller.

Most display elements are orange, with the remainder reddish-orange. These two colors do not give a clear differentiation of function or mode. Vacuum-fluorescent displays can have almost any combination of colors. Pioneer might have used additional colors to group functions.

**CONTROL CLUMSINESS**

The remote control is compact and the buttons are of decent size. However, the layout is less than ideal. For example, the Center Mode (for Dolby Pro-Logic decoding) is in the same group as the three controls that set the delay for the rear channels. Similarly, the front/back level and balance controls are mixed with display mode, processing, and test-tone controls. Be prepared to spend a longer-than-average amount of time mastering this remote.

**HOW SHOULD A HALL BE MODELED?**

The Yamaha DSP-1, reviewed in Vol.10 No.4 and Vol.11 No.3, was the first ambience synthesizer to model specific concert halls. Yamaha measured the amplitude and direction of the principal reflections in a number of halls considered to have good sound, then digitally synthesized the corresponding delays.

On most of the hall models, the DSP-1 synthesized only the initial reflections. These are enough to establish a sense of space. However, all current ambience synthesizers include at least one model that goes further, adding the reverberant decay that occurs as the initial reflections rebound and die away. (On the JVC XP-A1000, all the models include reverberation. The Sony TA-E1000ESD included reverberation in two-thirds of its models.)

There is some disagreement as to whether the initial delays alone are sufficient, or modeling of the reverberation itself is needed. The arguments in favor of an “initial reflections only” (IRO) model go like this:

- The sound of a hall is determined principally by its initial reflections. Why should a model the secondary effects?
- Most recordings already contain reverberation. Presenting this reverb from different directions is sufficient; why "reverberate the reverb"?
- Initial reflections are simpler and cheaper to implement than full reverberation.

The counter-arguments in favor of full reverb are convincing, though:

- Two halls with similar initial reflections can have different decay times and patterns. For example, if you covered the walls of a cathedral with partially absorbent drapes, the initial reflection pattern would be nearly the same, but the decay would be quite different.
- An IRO processor reproduces the reverb in the recording from the directions of the initial reflections. This, of course, is inaccurate. A processor that fully synthesizes reverb can be designed to present it from the correct directions.
- A conventional stereo recording cannot support the extremely long reverb times found in churches or cathedrals. This is partly because long reverb times may muddy the sound, and partly because the level-setting functions are not well-conceived. Most DSPs have a master control for the effects channels, plus either a front/back balance control or separate front and back trim controls; either system is simple.

The SP-91D's set of controls is not so intuitive. There's a Rear Level control, but no matching control for the Front Level. You have to use Proc Level to set the Front level, then fiddle with Rear Level to bring it into balance.

There are also left/right balance controls for both the Front and Rear processing channels. These are of little use; it's unlikely that any listener is going to have laterally mismatched speakers, or sit off-center when alone. Pioneer does follow the de facto standard that the first press of a button merely displays the current value of a parameter. A second press is required to actually change the value. The idea is to let you view the parameters without modifying them, and to keep you from changing them accidentally.
GROWING PAINS
The review sample came from an early production run. It suffered from excessive noise in the rear channels. The noise rose and fell with the signal, and was plainly audible. Advancing the input level all the way reduced the noise only slightly.

A second unit (from a later run) had the same problem, but the noise was almost inaudible. I had to be sitting close to the rear speakers, and listening for the noise, in order to hear it. Although this is not state-of-the-art performance, it isn’t bad enough to categorically disqualify the SP-91D.

DIGITAL EQ
The SP-91D is one of the first consumer products with digital EQ. Unfortunately, its implementation is disappointing—at least to an audiophile.

Equalizers have their place even in “purist” systems. Critical listeners may want to consider the equalizer carefully. Have you noticed that B&W calls their equalizer a “bass- alignment filter”? They’re no dummies!

3 Have you noticed that B&W calls their equalizer a “bass-alignment filter”? They’re no dummies!

listener expects the final dying-away to come from the sides and the rear. (Hearing it from the front is musically unnatural.) But home playback, with synthesized reverb coming from the sides of and behind the listener, can support long reverberation times.

• The decay time of synthesized reverb can be varied to match it to the recording. Or it can be shut off altogether, leaving just the initial delays. Full reverberation gives you a choice; IRO processors don’t.

• Who cares about cost? LSI and VLSI1 are cheap.

For this listener, models that synthesize only the initial reflections invariably sound bland. The synthetic space is drab and has little character. It sounds rather like sitting inside a gray cloud. One is aware of the cloud, and different clouds have somewhat different shapes and textures. But none of them are very interesting clouds.

Worse, the reverberation does not seem to have a physical source. It’s just there, as if the reflections magically appeared in space, without walls to create them.

Full reverberation usually presents a vivid, more highly characterized view of the performing hall. You can hear the locations of the walls. Transients create distinct patterns of reverberation that stand out from the generalized decay of the more legato musical elements. The ambience is around you but away from you; unlike IRO processors, you are not sitting in a “wad” of ambience. For this listener, the more graphic effects of full reverberation are a welcome substitute for not being able to see the hall or performers.

Obviously, these are highly personal reactions. Since it’s difficult to compare the sounds of the real and synthesized halls, I can’t prove that full reverberation produces a more accurate simulation. Regardless, the astute listener will note that there are two classes of hall synthesis. If my descriptions and explanations aren’t enough to make up your mind, you should listen carefully before buying.

—Bill Sommerwerck

1 Large-Scale Integration and Very-Large-Scale Integration, respectively. With up to 100,000 transistors on a single chip, the computing power of 10 to 100 mainframe computers (a 1966) can fit into a square inch.

rect obvious recording problems, or make subtle adjustments in tonal balance. These sorts of changes require a large number of bands (to pinpoint the correction) and high resolution (to make level changes of 0.2 dB or less). The equalizer must also be sonically transparent—few are!

Alas, the SP-91D’s equalizer doesn’t meet any of these requirements. It has only seven bands, centered at 65, 160, 400, 1000, 2500, 6500, and 12,500Hz. The 65Hz band is too high to help in extending the lowest octave. The 160Hz band is also probably too high to be effective in taming midbass boom or adding warmth. On the other hand, the top band falls too low. If it were set at or above 20kHz, the top octave could be modified without introducing a peak. Nor does the EQ have good resolution. The smallest step is 2dB! This is a very crude adjustment, especi
cially when you're trying to make broad, shallow modifications.

Another EQ limitation is that you can't EQ the main channels and use ambience synthesis simultaneously. One or the other, but not both. (Ditto for Dolby Pro-Logic.) When ambience synthesis is selected, though, you can equalize all four ambience channels. This would be useful if your ambience channels' tonal balance differs markedly from the main channels.

Any EQ is better than none, especially when it comes at almost no added cost. But the SP-91D's EQ facilities are of such limited flexibility that they add little value to the unit. If you want EQ, you can find plenty of analog equalizers with 10 to 12 bands and separate controls for each channel.

**Ambience Synthesis**

The SP-91D offers a total of 15 room models. Unfortunately (for classical listeners, at least), the selection leans in favor of rock music and jazz. There are just four Hall models and only one Church model. However, the two Room models seem appropriate for small groups playing almost any kind of acoustical music. Another disappointment is that only Hall 4, Rock 2, Room 2, and Church have full reverberation. Regular readers know that I strongly prefer room models that synthesize full reverberation. (See the sidebar, "How Should a Hall be Modeled?" for a full discussion.)

The range of adjustable parameters is also rather limited. All the models let you adjust the initial delay, and the front and rear EQ. The programs that synthesize only the initial delays add two more variable parameters:

- room size
- liveness

The programs that synthesize full reverberation add these two variable parameters:

- reverb time
- high-frequency reverb

The catch is that you can have one pair or the other of these extra parameters, but not both. If you want to vary the room size or the liveness of the walls, you must select a model that synthesizes only the initial delays. These parameters are not controllable on the models that offer full reverberation. This makes the SP-91D one of the least flexible ambience synthesizers I've yet tested.

**Room Sounds**

The SP-91D's models do not have the vivid individual characterizations one hears from the JVC XP-A1000 that I reviewed in Vol.12 No.12. Still, there are audible differences.

The four Hall models present a fairly large space. As with all models that generate just the initial delays, Hall 1, Hall 2, and Hall 3 do not project a strong sense of walls being present, or of enhanced decay. The main differences seem to be among the strength of the rear reflections. Hall 1 sounds like your average concert hall—moderate reflections, with a moderate decay rate. Hall 2 sounds more lively—it has stronger reflections that take longer to decay. Hall 3 has very subtle reflections, so subtle that I had to walk over to the speakers to make sure something was coming out of them. But they're there.

The two models with adjustable reverb time, Hall 4 and Church, have a slightly more spacious sound than the others, with Church (naturally) having the advantage. The overall sound, though, has only a little more "texture" than that offered by the other models. Long reverb times (above 3 seconds) sound a bit metallic. This was not particularly noticeable while the music was playing, but was obvious at the end of a piece.

The two Room models present a smaller acoustic space, more like a recital hall, or even a large room (i.e., a "salon"). Of all the non-reverb models, these strike me as having the most coherent effects and pleasing sound.

All the SP-91D's models (even those with full reverberation) are, to my taste, rather bland. (It may be that the limited range of adjustable parameters reflects a relatively simple model.) I like a vivid presentation, with strong reflections and an obvious sense of the walls. This is closer to what I hear at a live performance.

Tastes differ. If you want ambience, but don't want to get so deeply involved in it, the SP-91D's models might be just what you're looking for.

**Dolby Decoding**

The Dolby Pro-Logic mode has an especially wide range of options. The Dialog channel can be set to Phantom (no Dialog speaker), Wide (full-range Dialog channel), or Normal (low frequencies from the Dialog channel.

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5 And no Cathedral, either. These "big Church" models, with really long delay times, can be really exciting, with the right program material.
routed to Left and Right). The 3-Channel Logic mode provides a Dialog channel for systems without rear speakers; the Surround channel is routed to the Left and Right speakers, with special processing to simulate a surround effect.

Like other Pro-Logic units using the Dolby Labs' chip set, the SP-91D has unsurpassed decoding. If you've been following my Dolby decoder reviews (Vol.12 Nos.8 & 11), you know that I subject the decoders to a number of "torture tests" that reveal how they behave under extreme conditions. I want to see how the decoder sounds to listeners sitting far off-axis\(^6\) or when there's only one channel of information.

For the off-axis tests, I stand as far in front of the Right speaker as that speaker is from the Dialog speaker. (This seems to be a "reasonable" extreme position for a large audience.) A mono signal should appear to come from the Dialog speaker, with no crosstalk audible from the Right. A scene with simultaneous dialog and stereo music should have little or no dialog audible in the Right speaker. (For the latter, I use the scene in Beer-lejuice where the Maitlands drive to their deaths.)

Like the other recently reviewed Pro-Logic decoder from AudioSource, the SP-91D performs superbly on this test. There was no audible crosstalk with a mono source, either in Wide or Normal mode. When both dialog and music were present, there was a faint (and I mean faint) ghost image of the dialog, I had to be listening for it to hear it.

The SP-91D also performed well on the "one-channel" test. The left track of the opening of Back to the Future is fed into the decoder, and the Left speaker is turned off. With only one input, the logic circuits should cancel all output from the other channels. This is a fairly rough test, because this scene has a lot of transient sounds (such as the toaster popping and water sizzling on a hot-plate). All previous decoders not using the Pro-Logic chip had problems, taking at least one second to recognize that only one channel was present. And the residual crosstalk was distorted on all decoders (except the Shure HTS-5300).

The Dolby Pro-Logic chips have now beaten the Shure 5300. The SP-91D almost instantly recognizes that only the Left signal is present. And although the crosstalk is down only about 16 to 20dB (as against the Shure's nearly 30dB of cancellation), that's good enough. Most important, the crosstalk is free of distortion or other artifacts.

DOLBY SOUND QUALITY
The SP-91D's Dolby decoding sounded reasonably good, but did not match the near-perfection of the Shure 5000 series. A bypass test revealed a mild (but not particularly obnoxious) hardness added to brass.

The SP-91D also degraded the image somewhat. The soundfield was actually too wide,\(^7\) and slightly phasey. The image space was flattened and "jumbled"; the sense of a particular group of instruments performing in a specific acoustic was diminished. The direct and ambient sounds were more of a hodgepodge, less of a Gesamttonbild. Musicians or instruments at the center were down slightly in level.\(^8\)

In a direct comparison with the Shure 5300, the slightly hard, "congested" quality remained audible. The sound lacked openness and had a gritty-edgy quality.

If the sound of this sample is typical of an average SP-91D (and I'm not sure that it is), I'd give the decoder a recommendation at the top of Class C in Stereophile's "Recommended Components" listing. Its sound quality was at least as good as that of any other decoder I've tested (except the Shure and the Sony TA-E1000ESD).

RECOMMENDATIONS
Pioneer's SP-91D is a remarkable technical achievement, pointing at the direction in which hi-fi (at least, upscale midbrow hi-fi) is going: gobs of sophisticated DSP at near-giveaway prices. However, it falls short in ways that should make the Stereophile reader think hard and long before plunging down his or her plastic. In terms of features, the SP-91D represents fair value for money. But the digital EQ and ambience synthesis have severely limited flexibility. It's impossible to make a categorical recommendation or rejection.

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\(^6\) This is the whole point of using Pro-Logic and a Dialog speaker. An on-axis listener doesn't need them.  
\(^7\) That is, wider than the source material. An error is an error, even if it's a euphonic error.  
\(^8\) The image problems are probably due to minor misalignment of the decoder, or a defective Dolby chip. Of course, I can't tell whether it occurs with all SP-91Ds, or it's a sample defect.
A ROOM FULL O’ TUNES: MICHAEL GREEN PAYS A VISIT

Guy Lemcoe


AmpClamp vibration arrestors for components. Approximately 19” W by 12” D by (variable) H: $129 in black (other colors, $149).

Both: Approximate number of dealers: 92. Manufacturer: RoomTune, P.O. Box 57, Sugarcreek, OH 44681. Tel: (216) 852-2222. Fax: (216) 852-2363.

It all began back in May, when Michael Green, the guiding light of RoomTune, called to say he’d like to come to Santa Fe to assist me in “tuning” my listening room. I was hesitant; I thought I’d done a reasonable job setting up my listening room with the RoomTune products sent to me earlier by Green’s associate, Mike Finley. I was quite happy with the sound, thank you, and didn’t feel the necessity for more tweaking.1 But I’ve never been known to turn down a visit by a manufacturer; I agreed to entertain Mr. Green.

1 In retrospect, I attribute my smug attitude and reticence toward this visit to a condition I call “reviewer myopia.” It seems that reviewers are often so engrossed in our own ego-trip audio-guru mindset that we easily lose sight of the forest for the trees. We often mistake the finger pointed at the moon for the moon itself. Worse yet, we even begin to lose interest in music!
Michael Green has one of those great smiles, and doesn't appear to have an ornery bone in his body. He grinned from ear to ear as I approached him in Stereophile's parking lot, seemingly towering over Tom Norton, who stood beside him. If you've seen the photograph of Michael Green in his ads, you may be reminded of certain characters you've seen in those epic movies usually shown during the Christmas or Easter holidays.

Before Michael arrived, I had put a CornerTune in each upper corner of my listening room—the visual effect similar to a dense spider web covering the conjunction of wall and ceiling. I trusted the Velcro, which attaches the CornerTunes to the walls, would hold, as one of the 'Tunes was directly above my turntable? An EchoTune was affixed to the wall at ceiling height behind and centered between the loudspeakers. Another was placed, also at ceiling height, halfway along the wall to the left of the listening seat. Two more EchoTunes were similarly placed on the other walls. I had six RoomTunes in the room: one in each corner behind the speakers; three arranged, box-like, between the speakers against the rear wall; and one directly behind my listening seat. My Mirage M-3 speakers were positioned a little over 3' from the rear

2. It did not fall down. For a more finished appearance and the assurance that the 'Tunes won't fall down, you can use brass upholstery nails.
wall, toed-in slightly, 18" from the side walls, sitting securely on Arcici Super Spikes (which easily penetrated the wall-to-wall carpeting in my 11' by 14' room). The listening chair was situated so that the back of my head was 24" from the rear wall.

Michael sat for a while, listening, then asked if I would leave the room. I left to grab a Modelo Especial from the fridge and catch a smoke. After a short time, the door to the listening room opened and Michael appeared, wearing that irresistible smile, holding two RoomTunes. "Here," he said. "You don't need these." He handed them to me, returned to the listening room, and closed the door. I stood in the hallway, holding the RoomTunes, looking like Paul Bunyan clutching a pair of Acoustat Model 1 loudspeakers. (RoomTunes really do resemble miniature Acoustats. I thought it appropriate to put them on either side of my TV set as conversation pieces.) A few more minutes passed, the door opened again, and another RoomTune exited the listening room. Michael finally emerged, grinning and hardly able to contain his excitement. "Come on in," he said. "Have a listen."

The first thing I noticed when I entered the room was that the speakers had been moved farther out into the room. Much farther. They now stood with their backs 5' from the rear wall, toed-in slightly as before. The listening chair had been moved forward so that the distance from my head to the wall behind was now 48". These were the only major changes Green had made. The wall behind the speakers was totally bare, the arrangement of "Tune between the speakers gone. Only a lone "Tune midway between the speakers remained. The 48"-high "Tune behind the listening chair had also disappeared.

We'd been listening to a great recording by Brazilian guitarist Egberto Gismonti—Danca Dos Escravos (ECM 1387). I listen to this disc often and am always thrilled by the vitality and passion expressed in the music via Gismonti's admirable guitar technique. For me, this recording sets an example of how to capture the minute details of a performance without sacrificing the sense of air and ambience so necessary for a convincing portrayal. I had no idea how much better the sound could be until Green had worked his magic on my room! Before tuning, I had accepted the sound of this disc as representative of some of the best ECM had to offer. The soundstage—or, more appropriately for ECM recordings, "soundscape"—was expansive, reaching well beyond the boundaries of the speakers in all directions. It's as if the listener's nose is pressed against a giant bubble, his or her peripheral vision catching its arcuation. I had no problem with this perspective and didn't realize it was possible to actually penetrate into that bubble until my room was tuned.

After tuning, with my ears 5' from the front of the M-3s, I entered that envelope of sound which before had stretched just ahead of my nose. The effect was dramatic, due in large part to the new relationship which was developing between myself and the music. Looking straight ahead from the listening chair, the M-3s (which, in a room the size of mine, cannot be considered "unobtrusive") were visible only at the edges of my field of vision. Their presence in the room was soon forgotten as I stared at the lone "Tune behind them. I was aware only of a "wall of sound" extending from the left to right sides of the room, accompanied by a great sense of depth. It was as if I'd been let in on some well-kept secret. I suddenly felt privy to the musical experience to a degree beyond any I'd experienced before. I became an intimate part of the soundstage—no longer an observer, but a participant in the experience! Minute performance details became unambiguous, lessening the interpretive burden. A result of this was that I became a more relaxed listener.

This may all sound incredible, the yapping of a reviewer who's spent too much time kneeling to triode monoblock amps at the high-end altar. Believe me when I tell you that the experience was not singular. Several of my listening buddies expressed disbelief at the transformation wrought by tuning. "It just keeps getting better," exclaimed Michael Mandell. "And it sounded great before," he added, closing his eyes and sinking deeper into the chair. "Your room just got much larger," Jerry said. As I fed the latest Harry Connick, Jr. CD into the Kineticares KCD-40, Jerry continued, "The sense of space and depth is as good as I've heard. Imaging is right on! What a great recording. Let's listen to Fairytales next." Lee was speechless as I lifted the stylus from "Sazilakab," on Jorge Reyes's 1983 album, Ek-Tunkul (Kollectiv K-JRV 001). It wasn't until side one of Giles
Reaves’s 

Wunjo (MCA-5819) ended, however, that he swung around in the chair to face me, his eyes wide open, exclaiming, “Wow! Your system has just reached another plateau!”

It’s difficult to describe my listening experience in the tuned room. I could say the rear corners of the soundstage were rendered in better perspective, and that depth was enhanced. I could also say that imaging was more precise, with a heightened sense of air around the performers. I could go on to say that spectral balance and timbral accuracy seemed, respectively, certain and honest. Above all, I could add that the presentation of the music had a facility, a grace to it, which made listening to my favorite selections all that more enjoyable. You’ll have to hear the effect for yourself, in your room, with your setup, to appreciate my enthusiasm for Michael Green’s controversial, less-is-more approach to the taming of room acoustics.3

In my case, from the moment I first heard the changes, I became an advocate.

**WHAT’S GOING ON HERE?**

What form of black magic has been wrought by this sound engineer, former gospel performer, and cousin of “Doc” Watson? His about-face approach to room treatment was hard for me to swallow—at first. Having digested Tom Norton’s lucid discussion of listening-room acoustics,4 I would place Green’s position toward the far left. If I understand his philosophy correctly, Michael Green views room-damping approaches to acoustic treatment with a doubting eye. To him, the net effect of a lot of “conventional” wisdom regarding room treatment is to attenuate acoustic energy, especially that associated with frequencies above 4 kHz. As a consequence, so Green’s argument goes, music reproduced in those rooms is robbed of high-frequency extension, which results in a distinct lack of “air” and harmonic overtones. The richness and élan present at live performances is absent from these home hi-fi systems.

Green’s mission is one of rehabilitation: He wants to restore this missing acoustic energy and thus refit music with life and opulence. The first step in this process of “room tuning” is to empty the listening room in order to make it as “live” as possible. In practical terms, this means removing most, if not all, sound-damping objects from the room.5

Green likes to see bare walls in sparsely furnished listening rooms. In fact, he likes to see bare rooms period, since it is from that point that true room tuning can begin. The process starts by minimizing reflected sound waves without overdamping the environment. It’s Green’s contention that the junction between ceiling and wall is a room’s most reflective, energy-producing interface. These upper corners act as mirrors, vigorously attracting and immediately reflecting the higher frequencies. If there was a way to “trap” this energy, the duplication of sound waves at this point would be retarded or stopped. Enter the CornerTunes. These devices, when installed at the room’s corner wall/ceiling interfaces, reflective side out, act as acoustic wave (energy) traps and baffles, terminating and diffusing the upper-frequency energy waves reaching them. One in each corner does the trick

Halfway along the walls, at ceiling height, is the zone Green refers to as the “primary echo slap generator.” Midway between that zone and the corner is the secondary generator. If the primary zone can be controlled, so goes Green’s argument, the effects of the secondary will be lessened or eliminated. Enter the EchoTune. These devices, when installed correctly (ie, reflective side out), act much like the CornerTunes in trapping and diffusing duplicate upper-frequency acoustic energy or sound waves. It’s important not to get carried away with EchoTunes. If four of them enhance the sound, it’s mistaken to assume that eight will improve it even further. Remember, the idea behind tuning a room is to control duplicate acoustic energy without overdamping. In Michael Green’s scheme, less is more.

The highly reflective nature of ceilings in most rooms can cause problems in some environments; RoomTune offers a solution for those concerned with this situation. Called the CeilingTune, it’s installed ahead of and midway between the loudspeakers on the ceiling directly in front of the listener. I’m told it’s adjustable and can be considered the final tool used in room tuning. Unavailability

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3 With the customer’s satisfaction guaranteed by RoomTune and its distributors, this will not be hard to do.


5 This step which will surely threaten domestic tranquility, especially if the listening room is “shared” with other family members for other functions.
of the product and apprehension about installing such a device on my ceiling (which I don’t own) prevented me from auditioning it. For those who own as opposed to rent, this appears to be a treatment worth investigating. If I can overcome my fear of drilling holes in my apartment’s ceiling to install lighting tracks, I’ll ask for a CeilingTune.

For most listeners, the placing of RoomTunes will be the final step in the room-tuning process. It’s important to remember that RoomTunes are only tools to help you decide where to place your loudspeakers. It’s not enough to just put four or more RoomTunes in your room according to some published schematic, then sit back and enjoy great sound. The process entails experimentation with placement of listening seat, speakers, and RoomTunes (since the sound in each room will be affected differently according to the differences between rooms and loudspeakers). You must use your head and ears to establish optimum placement of the three key players in this game: speakers, Tunes, and listener. When that optimum arrangement is reached, you will be rewarded with sound which has “snapped” into focus in much the same way a fine camera lens captures an image.

RoomTunes seemed to work especially well with the bipolar Mirage M-3 speakers. If you recall Tom Norton’s Vol.13 No.11 review, you’ll remember that the M-3s disperse sound to their rear as well as to the front. The character and construction of the rear and side walls is very important with these speakers (they seem to especially like highly reflective, wallboard-over-frame construction). Other speaker designs will have other requirements and/or eccentricities. You must experiment and not take anything for granted. In short—be adventurous!

**AMPCLAMPS**

If, as some say, Santa Fe rests on a giant vibrating crystal, then Michael Green picked the right place to demonstrate his AmpClamps. Whereas RoomTunes address the problem of wayward acoustic energy generated in a room when music is playing, AmpClamps address the resonances occurring within and outside electronic components; resonances excited, for example, by floor- and air-borne vibrations, from motors, transformers, cooling fans, etc.

An AmpClamp consists of two 1”-thick slabs of MDF between which you place your CD player, preamp, amp(s), processors, and other gear. Threaded steel rods pass through the four corners of each slab and are screwed into four large knobs (feet) which support the slab and equipment. The top slab is then placed on the component and the remaining four knobs are tightened down on the ends of the rods, thus “clamping” the component. Rods of various lengths are available to accommodate equipment of different heights.

The fun begins when you place the “tuning” devices above and below the component. AmpClamps come with black marbles (held in place with small, round rubber bands) which are to be used for this purpose.
Once the marbles are placed under the gear, a set is to be placed on top of the gear. Let me tell you, I didn’t know the meaning of the word “frustration” until I tried to put my Manley Reference amps in the clamps! I eventually ended up using Tiptoes instead of the marbles for all the clamping. Michael Green recommends the more elegant (and expensive) Audio Selection cones from German Acoustics, but I had a problem with them which I’ll describe shortly.

Underneath a component, the Tiptoes or cones point down; above, they point up. Don’t think that once you’ve got the Tiptoes or cones placed above and beneath your gear, the show is over. Not quite. Under (or above) each point you must place a penny, and between it and the slab a layer of Navcom. This acts as a miniature shock absorber, giving you better feel and control over the actual tuning process. You can also move the Tiptoes or cones around to further tweak the sound (and perhaps drive yourself to drink). When all elements of the AmpClamp are secured, you can turn the top knobs to tighten everything down and begin, in Green’s words, “to tune out resonances and tune in the music.”

Clamping the CD player and preamp was considerably easier than clamping the amps, though fitting the AmpClamp onto a shelf in my Arcici Superstructure II equipment rack required much fiddling. Again, I used various-sized Tiptoes in place of the marbles (which I found almost impossible to use effectively). Incidentally, Green recommends clamping the system starting with the CD player, then the preamp, and finally the amp(s). I did just the opposite, since I had enough clamps on hand for the whole system. If you can’t clamp your whole system at once, then I urge you to follow Green’s advice and start with the CD player.

Perhaps the most revealing thing I can say about the effects of all this clamping is that for the past few days, listening to the system with all the clamps removed, I’ve found myself quickly getting bored with the sound. I don’t tap my feet or bob my head as often or as energetically as I did when the clamps were installed. I no longer get the goosebumps I used to listening to certain songs. Worst of all, I tend to cut listening sessions short, often ending up on the sofa in the other room watching TV! It’s obvious some insidious force is at work here, but I’m at a loss to explain it.

The AmpClamps give the listener music reproduced with sharper, faster transient response (less smearing), increased airiness, exceptional ambience recovery, tighter, fuller, more pitch-accurate low bass, sparkingly extended highs (devoid of any haze or glaze), revelatory fine-detail retrieval, timbral “rightness,” and a general ease of presentation I missed or was unaware of in the past. For example, the mechanics of the piano’s action and the occasional “twang” of the strings on “Little Clowns” and “Little Waltz,” from Harry Connick, Jr.’s self-titled Columbia debut (CK 40702), were portrayed with more—I hate to use this word—“palpability” after clamping. The localization of these extraneous sounds in and around the piano was extraordinarily precise and true to what you would expect to hear at a live performance were you lucky enough to get a seat close to the stage.

Though I had no apparent problems with image specificity before, clamping the system focused the sound even more pointedly, imbuing it with additional credence. On the same album, Ron Carter’s string bass on “Vocation” assumed a real presence in the room, the leading edges of the notes clearly audible.

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6 I have reservations about the AmpClamp when used with tube amps, especially those operating in triode mode. My Manleys put out some heat; I can’t help but wonder about the restricted ventilation imposed by the AmpClamp’s top plate and its effect on the amp’s longevity. After a few hours of listening, I reached under the top plate and felt the penny. It was uncomfortably hot to the touch. In fact, the airspace between the top of the amp and the plate was quite warm.

Earlier I mentioned that I’d replaced the large Audio Selection cones with large Tiptoes. I did this because of an incident which occurred when I wanted to adjust the position of one of the cones and noticed that it would not move—the adhesive on the bottom of the cone was oozing out from its protective cover. After removing the top plate, I pulled the cone off the amp, turned it over, and noticed a honeycomb pattern impressed in the adhesive’s shiny protective cover paper. The heat from the amps had softened the adhesive to the point where it had flowed and picked up the pattern of the amp’s protective grille. I pointed this out to Michael, who seemed surprised. He said he will design and make available a perforated top plate to ensure adequate ventilation. I understand that cones without the adhesive are available on special order from German Acoustics. They’re solid brass and cost more.

7 Use a light touch when tuning your CD player, or you may interfere with the operation of the transport mechanism. I got carried away on the Kinenergetics and reached a point where the drawer would not open.

8 By the time this review is published, RoomTune will have their ClampRack available in several heights. As the name implies, it’s an equipment rack which incorporates Amp-Clamps into the design.
as they sprang from his instrument. Sure, I’m used to hearing leading edges of notes and their “tails” as they taper off. I’ve not heard them, however, so explicitly. CDs and LPs took on the sense of \textit{elan} one experiences listening to live music. Most importantly, the hours I spent in the listening seat became happier ones.

You may or may not hear the results I did. It’s quite likely your expectations of the sound of your system differ from mine; you may use the AmpClamps to achieve a different sound. What’s important is the fact that a tool exists to enable you to \textit{choose} a sonic signature unique to your system which pleases you. After all, when the smoke has cleared, it’s your happiness which counts.

RoomTunes and AmpClamps are not for everyone. Some simply won’t want to fuss with them. Domestic and/or cosmetic concerns will preclude their use for others. However, Michael Green’s unique products will enable those dedicated to good sound to cross a threshold which, in the past, seemed immutable. With the introduction of the AmpClamps, Green has opened a Pandora’s box similar, I believe, to that opened a few years ago when differences between cables were heard. I predict that we’ll see the market flooded with similar products in the near future. In addition to the forthcoming SpeakerClamp, Green says he has a few other ideas up his sleeve, including one which addresses the problem of vibration-induced resonances at their source on circuit boards. Tell me, Michael, when you finish that project, will you design HouseClamps? $\mathcal{S}$

\section*{Two DIY Loudspeaker Designs}

\begin{center}
John Atkinson
\end{center}

In the postscript to this report, Corey Greenberg reports on the third annual “Audiophile Loudspeaker Sound-Off,” organized in October 1991 by A&S Speakers of San Francisco, for which he served as one of the judges. Having reviewed and measured some 75 commercial loudspeaker designs over the last three years, I thought I’d indulge myself in a change of pace. I therefore offered A&S’s Arthur Rosenblum the opportunity of running the three winning designs through \textit{Stereophile’s} standardized loudspeaker test schedule. He accepted with alacrity, though shipping constraints limited the exercise to just the winner and the runner-up.

\section*{THE WINNER:}
\textbf{Bob Spear/Alex Thornhill three-way}

Winner of the $500 prize money was the speaker enigmatically referred to by CG as “No.11.” A 41.5”-tall transmission-line design, 13” deep and 9” wide (see fig.1), this uses French Focal drivers. Mounted at the top of the baffle is a V416 8” woofer, with then a T90ti 1” inverted titanium-dome tweeter (\textit{Stereophile} readers will remember Dick Olsher being impressed by this tweeter in his review of the JM Lab Micron design last September, in Vol.14 No.9 and a 5K0-13L 5” Kevlar-cone midrange. The rectangular vent for the woofer transmission line, which is about 7.5’ long, is sited at the base of the front baffle. Following best audiophile practice, the crossover is mounted in a separate box, with the speaker offering three sets of terminals on its rear panel, one for each driver.

The crossover, which physically and electrically divides its three sections, is based on a Focal design and is complex, as can be seen in fig.2. The tweeter high-pass filter is third-order, with series resistors to drop the level to match the midrange unit. The woofer low-pass at first sight appears to be fourth-order, until you notice the fact that there’s a third inductor in series with the shunt capacitor. I modeled the complete crossover, assuming all inductors and capacitors to be perfect and the drive-units to be 8 ohm resistors, using the ECA-Ace circuit analysis program from Tatum Labs.1 The results are shown in fig.3. It can be seen that the unusual woofer

\begin{figure}
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\includegraphics[width=\textwidth]{figure1.png}
\caption{\textbf{THE WINNER: Bob Spear/Alex Thornhill three-way}}
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\includegraphics[width=\textwidth]{figure3.png}
\caption{\textbf{THE WINNER: Bob Spear/Alex Thornhill three-way}}
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filter superimposes a deep notch at 700Hz over the usual low-pass response, resulting in a very steep rolloff after a degree of peaking. The midrange-tweeter crossover lies at 4.5kHz, quite a high frequency for a 5" unit. Note also that the midrange bandpass filter returns above 10kHz, but not to any significant degree.

Simulation is all very well, but real circuits are built with real components. Fig.4 therefore shows the measured response of the actual crossover filters when loaded with 8 ohm resistors. Very similar to the simulated response, the Qs are lower, meaning that the 700Hz notch in the woofer’s drive signal is not as deep, nor are any of the peaks as pronounced. The next step was to measure the voltage drive at the three pairs of drive-unit terminals when connected to the crossover. This is shown in fig.5. The drive-units are most definitely not 8 ohm resistors, and the filter performance is subtly changed.

Finally, what are the acoustic outputs resulting from these drive signals? These, mea-

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1 Tatum Labs, 1478 Mark Twain Court, Ann Arbor, MI 48103-9709. Tel: (313) 663-8810.
asured with the DRA Labs MLSSA system\(^2\) on the tweeter axis at a distance of 45\(^\circ\), are shown in fig.6. (The other speaker of the pair was effectively identical, suggesting that the designers have done an excellent job in matching the drivers and crossover components from one sample to the other.) The steep woofer slope suppresses the cone break-up behavior by 20dB, with a smooth crossover to the midrange unit at 520Hz. The latter unit is pretty flat in its passband, though a severe spike at 5.5kHz, presumably a cone break-up mode, lies only 6dB down. The tweeter balance is also pretty flat, though some sharp spikes can be seen in the mid-treble. Its ultrasonic resonance can be seen ca 23kHz.

I auditioned the speakers with CD exclusively, using a Meridian 602 transport feeding the VTL D/A processor. Amplification was Audio Research Classic 120 power amplifiers, and either a Melos headphone amplifer used as a line-stage or a Mark Levinson No.26S preamplifier, with MIT CVT interconnect and speaker cable. The speakers were coupled to the floor beneath the carpet with German Acoustics brass cones, which went some way to eliminating a sense of “slow-ness” to the sound.

Vertical listening height seemed quite critical, pink noise sounding smoothest with the ear just below the center of the woofer. Even so, a sharp energy peak could be heard in the mid-treble. The LEDR imaging tests on the

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Footnote:\(^2\) For consistency's sake, I've plotted out all these crossover curves with the Audio Precision System One software. Note, however, that the Audio Precision was only used to measure the loudspeaker electrical impedances. DRA Labs' PC-based MLSSA system, in conjunction with a calibrated B&K 4006 microphone, was used for all the acoustic measurements.
mid-treble. The LEDR imaging tests on the Chesky Jazz Sampler CD revealed the Spears to offer a good sense of image height, and precise lateral imaging with a reasonable sense of depth. Ambient detail seemed somewhat suppressed, however, the Steinway on my Chopin recording on the Stereophile Test CD sounding as if it had been recorded in a drier hall than had been the case. The subjective bass extension seemed only moderate for what is a quite large enclosure; the 32Hz warble-tone band on the Stereophile Test CD was just audible, the 25Hz and 20Hz bands were missing in action.

As mentioned earlier, there was a subjective sense of slowness to the sound, which listening to well-recorded rock and acoustic piano seemed to indicate was associated with a lack of lower-midrange clarity. Both electric bass and piano sounded rather boxy, with a reduced sense of pitch definition. Male voice, too, sounded rather thick. Listening to the cabinet walls with a stethoscope revealed a strong “hoot” to be present around 300Hz, which may well be the root cause. As the knuckle-rap test revealed the walls to be reasonably dead, it’s possible that this hoot is due to a line resonance.

Fig.3 Spear design, crossover filters, simulated voltage drive assuming each driver identical to an 8 ohm resistor.

Fig.4 Spear design, crossover filters, measured voltage drive loading each filter with an 8 ohm resistor.

Fig.5 Spear design, crossover filters, measured voltage drive loading each filter with its respective drive-unit.

Fig.6 Spear design, acoustic crossover measured on HF axis at 45°.

Fig.7 Spear design, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).

Fig.8 Spear design, vertical response family at 45°, normalized to response on woofer axis, from back to front: difference in response 7.5° above cabinet top; difference level with top of cabinet; reference response; difference on tweeter axis; difference on midrange axis.
The midrange was nicely neutral, woodwind instruments, for example, being reproduced with all of their individualities intact. Higher in frequency, however, voices acquired a sibilant edge, while some piano notes above the top of the treble staff took on rather a metallic coloration. The normally sweet-sounding organ pipes of Peter Mitchell’s and Brad Meyer’s organ recording on the Stereophile Test CD were also a little too grainy for comfort.

Overall, the sound was well-balanced, but to give the lie to JGH’s saying that getting the midrange right is more important than anything else, I was left somewhat cold by the sound of Bob Spear’s loudspeaker. Despite its low levels of midrange coloration, I couldn’t ultimately get past its lack of clarity and rather fiery highs.

Moving back to my measurements, fig.7 shows the speaker’s electrical impedance and phase. (Reinforcing my impression of excellent pair-matching, the impedance plot of the other speaker was virtually identical.) The transmission-line bass tuning doesn’t look appreciably different from that of a sealed box, with a single woofer peak noticeable at 40Hz. The impedance falls to 3 ohms in the midrange, implying that wimpy amplifiers need not apply for the job of driving the Spear design. Despite the speaker’s panels being very lively at 300Hz, this doesn’t show as a “wrinkle” in the impedance amplitude and phase plots.

Fig.9 Spear design, horizontal response family at 45°, normalized to response on woofer axis, from back to front: reference response; difference 7.5° off-axis; difference 15° off-axis; difference 30° off-axis.

Fig.10 Spear design, anechoic response on listening axis at 45° averaged across 30° horizontal window and corrected for microphone response, with nearfield woofer and port responses below 200Hz and 500Hz, respectively.

Fig.11 Spear design, impulse response on listening axis at 45° (5ms time window, 30kHz bandwidth).

Fig.12 Spear design, cumulative spectral-decay plot.
Before examining the amplitude response of the Spear speaker, I’ll look at the way in which that response changes with listening position. Normally, I assume that a loudspeaker has been designed to sound flat on its tweeter axis. With this design, however, the tweeter lies just 30.25" from the floor, which is an unrealistically low listening position. The center of the woofer is a more normal 37" from the floor, so I used that as my reference axis. As can be seen from fig.8, which assumes the speaker to have a perfectly flat response and just shows the changes as the listener moves up and down, moving significantly above or below that axis introduces a suckout at the upper crossover frequency. Listening with your ears between the top of the enclosure and the tweeter, however, only introduces minor changes in balance. Similarly, fig.9 shows how the speaker’s measured response changes as the listener moves to the side of the woofer axis. Minor peakiness can be seen to develop around 2 and 4kHz, but this is not very critical. The otherwise excellent dispersion is presumably due to the narrow baffle and contributes to the excellent imaging accuracy noted during my auditioning.

To the right of fig.10 is shown the quasi-anechoic response on the woofer axis at a distance of 45". The Spear loudspeaker is fundamentally flat in response trend, with only a couple of peaks in the mid-treble breaking things up. (I wager that these peaks contribute to both the sibilance noted and to the grain and occasionally metallic nature of the speaker’s treble.) This is excellent measured performance for a home-brew loudspeaker—I’m not surprised CG liked this speaker so much—and by comparing fig.10 with fig.9, it can be seen that the peakiness can be alleviated by listening somewhat off-axis, with the speakers not toed-in all the way to the listening position.

To the left of fig.10 are shown the responses of the woofer and line vent measured in the nearfield. The levels of these can only be approximate, but I used the speaker’s in-room response (not shown) as a guide. The bass rolls out gently below 50Hz, as expected from my listening, while the vent adds only a small degree of midbass reinforcement. Again, the vent level shown is a “guessimate”; note, however, its peaky behavior in the lower midrange. Is this due to pipe resonance in the line? Does it correlate with the 300Hz hoot and the lack of lower-midrange clarity? It’s hard to say, but I have to say that the “slow” quality and the lack of clarity are things I’ve heard with other transmission-line designs; the big IMFs and TDLs, for example.

Fig.11 shows the Spear design’s impulse response—revealing the high-order crossover by the lazy decay, overlaid with ultrasonic ringing from the tweeter—while fig.12 shows how the speaker’s response changes as that impulse dies away. This “waterfall” plot reveals resonances in a speaker by ridges that emerge parallel to the time axis; the ultrasonic tweeter resonance, for example, around 23kHz. All in all, the Spear is very clean in the midrange and low treble, but fig.12 does reveal the upper of the twin treble peaks in fig.10 to be due to a resonance. Looking at the drive-units individually reveals these peaks as a tweeter problem, though the lower one, at 5.5kHz, coincides with the on-axis peak in the midrange unit’s output.

**RUNNER-UP:**
**RALF PATTERSON TWO-WAY**

This speaker, Corey’s “No.8,” scored well due to its ability to throw a well-defined sound-
stage and to its low level of coloration on vocal recordings. A two-way design, it combines a 7" Kevlar-coned woofer from the German Eton company with a 1" soft-dome Morel tweeter. This tweeter, the MDT33, is highly regarded, but I'm aware of only one professional designer (other than Morel) who makes use of it: Brian Cheney of VMPS. This is probably due to its high cost.

The over-square enclosure (see fig.13) measures 14" high by 10" wide by 12" deep. The competition samples are reminiscent of Dick Olsher's Black Dahlia DIY design in that they are finished in black with rounded horizontal side edges. The front baffle is asymmetrical, with the tweeter offset to one side. (The competition samples were supplied as a matched pair.) The woofer is reflex-tuned by two 2"-diameter, 9"-deep ports on the cabinet's rear. A black grille is fitted, but as this consists of cloth stretched over a bulky wooden frame, I left it off for all auditioning and measuring.

The crossover is shown in fig.14. Like the Spear design, the tweeter high-pass filter is third-order, though the two series capacitors are of unequal value. As well as a resistive divider to lower the tweeter level, there is a shunt LC network to provide an additional notch. The woofer low-pass filter is physically and electrically separate from the tweeter (though the speaker has just one pair of WBT terminals) and is basically third-order with an additional CR Zobel network shunting the drive-unit.

As with the Spear loudspeaker, I modeled the crossover with the ECA-Ace circuit simulation program, assuming the drivers to be simple 8 ohm resistive loads. This time, the results were weird in that while the ultimate low-pass slope appeared to be correct

![Fig.14 Patterson design, crossover.](image-url)
and 24dB/octave, the high-pass appeared to be 6dB/octave broken by two notches (fig. 15), the lower one due to the parallel LC network. Puzzled by this, I carefully removed the drivers from one of the speakers and measured the voltage drive from the crossover at each of the drive-unit terminals, using the MLSSA system. These curves are shown in fig.16, and reveal the woofer indeed to have a 24dB/octave low-pass filtered drive, while the tweeter drive signal has a third-order high-pass slope. MLSSA allows you to calculate the electrical phase of the drive signals. These are shown in fig.17. You can see that each driver has a very similar phase response between 1kHz and 4kHz, meaning that they should be connected with the same polarity if they are not to be out of phase in the crossover region.

The same system was used for auditioning as used for the Spear loudspeakers, with 24" Celestion Si stands used to bring the tweeters level with my ears. Pink noise had a clean treble but sounded rather hollow in the upper midrange, with a somewhat phasey quality and a shelved-down low bass. Judged subjectively, though the upper bass seemed weak, the speaker's lows extended usefully to 40Hz. Nevertheless, on Eric Clapton's 24 Nights album, the majesty of Nathan East's low B-string was lost. (Though I used the speakers out in the room, it's possible that the Patterson speakers work better nearer the rear wall.) The lack of upper-bass weight was confirmed with my piano recordings, the left-hand registers lacking power. In addition, the midbass sounded a little gruff. ( "Gruff" is one notch on the subjectometer below "slightly boomy.")

Moving up to the midrange, the same hollowness heard on pink noise could be heard on both rock and classical recordings. The treble, however, sounded superb: flat, non-aggressive, yet detailed.

You may be feeling that I didn't like the sound of the Patterson speaker. Funnily enough, however, it grew on me. The lightweight, rather grumpy bass and not particularly neutral midrange, while not becoming...
inaudible, seemed less important the more music I listened to. For the speakers gave a delicious sense of being there. Voices in particular had a tangible quality about them, while the soundstage was both wide and very deep. When Bob Enders and David Chesky announced that they were 12′ away from the microphone on the Chesky Test CD, the Pattersons made it sound like they were 112′ away. On my piano recording, too, the solid Steinway image hung well behind the plane of the loudspeakers, while on JGH’s Praeludium recording, the orchestra sounded as if it was strung in an arc between and behind the speakers.

Tonally, with the exception of their treble, the Pattersons were considerably less neu-

![Fig.19 Patterson design, anechoic response on listening axis at 45° averaged across 30° horizontal window and corrected for microphone response, with nearfield woofer and port responses below 200Hz and 500Hz, respectively.](image)

![Fig.20 Patterson design, horizontal response family at 45°, normalized to response on HF axis, from back to front: difference 15° off-axis on woofer side of baffle; reference response; difference 7.5° off-axis on HF side; difference 15° off-axis on HF side; difference 30° off-axis on HF side.](image)

![Fig.21 Patterson design, vertical response family at 45°, normalized to response on HF axis, from back to front: difference in response 7.5° above cabinet top; difference level with top of cabinet; reference response; difference midway between drive-units; difference on woofer axis.](image)

![Fig.22 Patterson design, impulse response on HF axis at 45° (5ms time window, 30kHz bandwidth).](image)

![Fig.23 Patterson design, cumulative spectral-decay plot.](image)
tral than the Spear transmission lines, but, paradoxically, they satisfied more consistently on a musical basis.

The Patterson's electrical impedance and phase are shown in fig.18. The twin peaks in the bass are typical of a reflex bass alignment, with the ports tuned to 43Hz, the frequency of the “saddle” between the peaks. With an impedance that rarely drops below 7 ohms, Ralf Patterson’s speaker should be very easy to drive. In addition, the two speakers were virtually identical with this measurement, implying excellent crossover pair matching. Though the cabinet was extremely lively in the 500Hz region, this doesn’t manifest itself as blips in the fig.18 curves, so it may not be a subjective problem. Certainly, the speaker had better clarity in the lower midrange than the Spear design.

Turning to the Patterson speaker’s quasi-anechoic frequency response, averaged across a 30° listening window on the tweeter axis, this can be seen to the right of fig.19. The deep notch at 2kHz indicates that the tweeter and woofer are out of phase at the crossover frequency. This suckout will both lead to the hollow-sounding midrange as well as exaggerate the sense of depth. Above 3kHz the treble is evenly balanced, if a little peaky (though it didn’t sound peaky). Below the notch, there is a large excess of energy in the 500-1500Hz region, which will contribute both to the sense of detail and to the palpability of voice reproduction. Both speakers measured virtually identically, suggesting that Mr. Patterson had been consistent in his crossover construction and selection of drive-units.

To the left of fig.19 are the individual responses of the woofer and port, measured in the nearfield, with their levels plotted according to the in-room balance. The woofer is down 6dB at 60Hz, with reference to its level at 200Hz, while the output of the ports is centered on 43Hz. Were it not for the excess energy in the upper midrange, the Patterson speaker would sound as if it had decent bass response. As it is, however, it impresses the listener as being rather bass-shy.

Looking at the way in which the speaker’s balance changes as the listener moves to the side (fig.20), the high treble doesn’t change significantly across the 30° window, though the crossover notch actually fills in a little. In the vertical plane (fig.21), the crossover notch fills in as the listener increasingly moves beneath the tweeter axis, reinforcing the idea that the drive-units are connected with the wrong polarity.

The Patterson’s impulse response on the tweeter axis is shown in fig.22, and the “waterfall” plot corresponding to that impulse response in fig.23. The on-axis crossover notch is clearly visible, as is a strong resonance at 4.7kHz. Otherwise, the Patterson speaker’s decay is clean. (The black ridge at 16kHz is due to the computer monitor and should be ignored.)

Summing Up
It’s been said that even a hobbyist with talent can’t match the efforts of professional loudspeaker designers. He lacks both design facilities and measuring equipment, as well as the extra impetus that comes from knowing that his mortgage payments depend on the outcome of his design efforts. In addition, drive-units available to the hobbyist are supposed to vary wildly from their nominal specification, meaning that the amateur speaker builder doesn’t have much chance of constructing a pair of loudspeakers that sound alike. Yet both these loudspeaker designs appear to give the lie to the conventional wisdom. Both are well-matched from side to side, and while I found quite a lot to criticize in their sound quality, both still offer superior sound to what I’ve heard from some well-regarded commercial loudspeakers. I was impressed by the midrange neutrality of Bob Spear’s and Alex Thornhill’s design; many commercial designs don’t measure as well or sound as good in this region. Although its sound quality was not to my taste overall—that lack of lower-midrange clarity, the rather uninvolving balance, the rather grainy treble—it is a mature design that will appeal to many to whom tonal accuracy is a high priority and, in home-built form, is excellent value for money.

Ralf Patterson’s design is, in my opinion, less thoroughly worked-through than Bob Spear’s. There is a question as to whether the tweeter is connected with the correct polarity, the midrange is more colored, and the bass is both shelved down with respect to the midrange and a little gruff-sounding. Nevertheless, in the context of a home-brew design, it is still a creditable effort, offering an open sound quality with good detail, superb sound-
staging, and an excellent sense of tangibility. I encourage those who build it to experiment with different crossover topologies and drive-unit polarities.

Finally, if bitten by the loudspeaker-building bug, you should subscribe to *Speaker Builder* magazine, published six times a year by the publishers of *The Audio Amateur*. A subscription costs $25/year and is available from P.O. Box 576, Peterborough, NH 03458-0576. Tel: (603) 924-9464. You should also obtain a copy of the fourth editions of both Vance Dickason’s *The Loudspeaker Design Cookbook* and Martin Colloms’s *High-Performance Loudspeakers*. Reviews are in the works; both books can be obtained, for $29.95 and $34.95 respectively (plus $2 S&H each), from Old Colony Sound Lab, P.O. Box 243, Peterborough, NH 03458-0243. Tel: (603) 924-6371. Fax credit-card orders: (603) 924-9467.

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**In the City by the Bay, the Hard Domes they did Bray**

Just what makes amateur speaker builders tick? What subtly different twist of DNA makes these people spend months gumming away in a dank basement when they could simply pick and choose from dozens of terrific commercial designs? Do they hear something we don’t? Are they onto something better? Or do they just have a lot of free time on their hands?

Driver maven Arthur Rosenblum of A&S/Just Speakers¹ has been holding Sound-Offs for three years running; TJN reported on last year’s competition in Vol.13 No.9. In short, what Arthur has done is invite speaker DIYers to drive, ship, or row their best-sounding designs to Just Speakers’ San Francisco store, where those that survive UPS are set up behind a humongous sheet of black grille cloth in A&S’s show room. Listening sessions commence, the best of the bunch competing woofer to woofer until either a clear consensus among the judges emerges, or they get tired of listening to speakers and just go along with whoever’s pushiest with their opinions?

The three judges couldn’t have been better suited to such a vast undertaking. In Ken Kantor, we had a successful speaker and circuit designer whose ideas have culminated over the past 15 years in seminal products from AR, NAD, and Ken’s current speaker company, NHT? Keith O. Johnson has built a remarkable body of stunningly realistic LPs and CDs for Reference Recordings, as well as designing electronics and speakers for Spectral and Precise, respectively. Me? I’ve blown up a lot of speakers over the years, most notably Criterions, Cerwin-Vegas, JBLs, EVs, Altec, Celestions, Jensens, Boston Acoustics, B&Ws, Genesisises, NHTs, Spicas, ProAcs, and a really cool pair of Panasonic “Thrusters” that came with my sister’s stereo when we were wee.

Sound-Off groundrules were simple: First we’d give all 15 pairs of speakers a good brief listen to get a rough estimation of their worth, then we’d pit those that stood out as superior to a final, no-holds-barred Death Cage round. The playback system was supplied by A&S: a tricked-out Magnavox CD player, Parasound amplification, a special switching box Ken Kantor built especially for the Sound-Off, and cabling by Mogami and Monster. After a pre-contest wake-up snack of pastries and croissants, we decided to listen to eight pairs, break for lunch, then come back and tackle the rest.

It soon became apparent, however, that we were in for a long afternoon; the first seven pairs were all seriously raw. The most common problem among these first contestants was a WAY overbright tonal balance, some to the point of pain. “AI-EEE!!” became a familiar refrain as we quickly eliminated the first seven in record time; to be fair, some of

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¹ Arthur and his wife Joan put out a cool-man catalog of just about every esoteric driver brand available—see the address at the head of JA’s review—along with tons of speaker-building parts like cabinets, assembled crossovers, film caps, etc. And if you’re interested in rolling your own but don’t want the hassle of spending years learning all this stuff, A&S/Just Speakers offers several kits designed by Joe D’Appolito, the father of the woofer/tweeter/woofer sandwich configuration that bears his name. A&S’s fourth Sound-Off will take place sometime in the fall. If you’re interested in taking part, give Arthur a call.

² No such luck this time, though; while Ken Kantor and I were fully prepared to have Keith judge us in a Pushy-Off, there was no disagreement among the three of us as to the eventual order of the winners’ circle. Which was good, ’cause I was starving; a tip o’ the bejeweled turban goes out to Reference Recordings’ Jan Mancuso for having us over after the event for genuine Frisco hippie burritos and wine.

³ NHT’s Model 1.3 was reviewed by Bob Harley in Vol.13 No.9, No.9, No.9, No.9, No.9.
these designs had a few things going for them, but someone must’ve told these guys that 1991 was The Year Of The Tweeter.

Keith Johnson shared his theory of why many speakers sound overly bright: many designers only use CD as a source during the “voicing” of the design. Keith believes that a rising high end in a speaker tends to counteract the steep ultrasonic rolloff filters in most CD players, resulting in improved phase response for the system as a whole. Whether or not this is true, I will say that the one area of performance I am most sensitive to is the high-frequency range. I’ve spent a lot of time blow-drying my hair with Marshall stacks, but somehow it’s always the highs that either seduce me or drive my butt screaming from the room. That’s why I’ve always preferred tubes, and that’s why I dig LPs.

How does one judge a speaker contest? Each of us brought a handful of CDs to use for evaluation, discs we were intimately familiar with under a variety of circumstances. Keith was lucky in that he was able to bring CDs that he himself had engineered: Reference Recordings’ Fiesta! disc of the Dallas Wind Symphony, for one. Ken brought several pop and rock discs, including the latest Lou Reed. I brought a couple of ol’ faithfuls: Jeff Beck’s Guitar Shop and the Red Hot Chili Peppers’ Uplift Mojo Party Plan. As it turned out, it was the Jeff Beck disc, the Lou Reed, and a Kurt Weill CD of Keith’s that we used most often throughout the contest.

At no time during the contest did any of us have any knowledge of what these speakers looked like, nor did we get any information on their driver complements, etc. We just knew them as “Speaker 1,2,” etc. This meant that A&S’s staff had to bust their asses all day long behind that big piece of grille cloth, quick-swapping speakers out and switching the cables. Thanks, Brian Smith, John Bucknell, and Bruce Zinky!

We finally narrowed it down to three speakers: numbers 8, 10, and 11. We decided to pit No.8 against No.11, the winner then battling it out with No.10. Of course, a statistician would argue that this scenario gives an unfair advantage to No.10, as it only has to prove itself once while the other two have to go through two trials. Statisticians tend to bug me, however, filling our “Letters” section with endless arguments over the way the math was handled at some double-blind test somewhere, showing that the X/(AB)-πi factor actually comes out to 50.00002% statistically significant, not 50.00001% as that buffoon Mr. Previous Letter-Writer so ungraciously concluded. So, if you know one of these staunch defenders of Math’s Supreme Power, give him some warm Maalox and calmly explain that we were always free to bring back the loser of the No8/No.11 match-up at any time later in the event, which was good because the loser of that first heat wound up the winner of the whole shootin’ match!

So how did we wind up with a winner? First we listened to No.8 vs No.11; although both were promising, No.8 got the nod for its ability to throw up a better soundstage. I should point out, I guess, that these last head-to-head sessions were level-matched using broad-band noise, so as to avoid the pitfalls of using a single frequency (1kHz, for example) to match levels when, quite possibly, one speaker might have a severe dip at that frequency while the other exhibits a peak.

It was down to No.8 vs No.10. As it turned out, No.10’s designer was so excited about the whole deal, he was waiting outside the store on the sidewalk for the contest to end so he could burst in and claim his due glory. 'Twan’t to be: his speaker, while certainly pleasant to listen to, was very rolled off in the high end à la the old AR3a. In fact, after repeatedly switching back and forth between No.8 and No.10, I found I wasn’t too crazy about either of ’em! I had a hunch No.11 was our man, though, so I asked Arthur’s henchmen to bring that pair back in for another listen.

The unnerving thing was, though, that all three pairs of speakers had enough problems that the contest, ostensibly a “Best Of” bout, turned into “Which One Of These Puppies Could You Learn To Live With?” One speaker would trounce another on Jeff Beck, then we’d put on Lou Reed and the second pair wiped the first! Each of the final three contestants had its own CD that made it sound clearly better than the other two, which made choosing a “best” overall speaker nearly impossible. For instance, while No.8 was clearly better at creating a believable sense of space in the room, it had much more obvious coloration through the midrange, giving it a very characteristic “signature” no matter
what kind of music we played through it. And while No.11 had much less coloration than No.8, several of the CDs, especially the Lou Reed, came off as sounding very flat dimensionally, with a 2-D presentation in stark contrast to No.8. But after a long final listening session, we found No.11 to be the best overall, and awarded it First Prize.

The winning design turned out to be a three-way transmission-line system designed by Robert J. Spear of Acookeek, MD. Robert builds cellos, violas, and violins for such noted talents as Rostropovich (you know, *Rostropovich*—Sheesh!) and the guy who plays cello in Lew Lipnick’s band. Robert is seriously into this speaker-designing bag; he wrote an article for *Speaker Builder* magazine last year called “Fibrous Tangle Effects in Acoustical TL’s,” which I’d thought was a kind of heart problem up till now.

So why do these amateur speaker designers put themselves through all of this backbreaking work and expense? Just how do they think that, by blindly trusting a driver’s published specs, they can produce a loudspeaker that can outperform commercial speakers designed by the guys who’re out there doing it for a living, engineers with access to test equipment and a super-wide range of bitchin’ high-end gear to evaluate their work with? How can they even be objective about what sounds good—especially when they’ve been up for three nights in a row trying to get the upper bass to flatten out a little? It’s virtually impossible to be able to say, “Hey; this sounded great last night at four in the morning when I finally decided on the best-sounding tweeter polarity by ear, but now I hear a midrange suckout and it sounds terrible.” How do they leggo their egos?

The answer has to be: for the fun of it. For every Paul Hales who cracks the big time, there’s a thousand Al Bundys out there trying to marry an 18” JBL to a Panasonic leaf tweeter and having the time of their lives. And fun is what it’s all about, after all.

So I salute you all, Amateur Speaker Builders; from Boise, Idaho to Tallahassee, Florida, from the Great White North to the wind-swept plains. For all across this land of ours, you freakazoids are whistling away in your basements, scarifying your families, keeping guys like Arthur Rosenblum warm and well-fed, and making sure that the spirit of the Rugged Individual stands strong and tall for all the world to be humbled by. You are the Beautiful and the Twisted.

—Corey Greenberg

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**FOLLOW-UP**

SOTA Cosmos turntable
Not long after my review of the $4000 SOTA Cosmos (Vol.13 No.7), things began to happen. The turntable was upgraded with a new motor, which appeared to have more to do with parts availability than any needed performance improvement. Then the drive circuitry had to be redesigned to function properly with the new motor. In other developments, Allen Perkins, one of the three most recent SOTA principals behind the design and manufacture of that company’s turntables (along with Robert Becker and David Fletcher), left to form his own company, Immediate.

We were promised a sample of the Cosmos, with new motor and circuitry, for an update shortly after the initial review was completed. But the weeks stretched into months, and when it finally arrived in early 1991, the news was out that SOTA had been sold and that its new owners would relocate the factory to Illinois.1 It soon became obvious that the sample we’d received—apparently from the end of the California production—had not been carefully built. The vacuum didn’t work and the motor was very noisy. I can only speculate—that is, I have to admit that one sample does not a trend make—that things were happening during SOTA’s last days in California which did not make for very happy turntables.2

There followed an unavoidable delay in getting another sample, this time from the new Illinois facility; setting up in a new loca-

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1 Their new address is SOTA Industries, 1318B Marquette Drive, Romeoville, IL 60441. Tel: (708) 759-8737. Fax: (708) 759-8730.
2 Corey Greenberg’s first sample of the lower-priced Jewel, which was to be included in his Vol.14 No.7 turntable survey, also was apparently from this production run and had a noisy motor. We have a new sample in Santa Fe; a review will appear in our April 1992 issue.
tion, with new people, is never easy. In the meantime the Cosmos (along with other SOTA turntables) was dropped from our "Recommended Components" list pending re-auditioning of samples made in the new facility. While we had no reason to doubt the SOTA quality that would come out of Illinois, we simply didn't know one way or another.

But when our next sample arrived, the shippers had done their worst. The only visible damage was a small crack in the artificial marble base at the corner nearest the tonearm cutout. Closer inspection, however, revealed that the entire spring structure in that corner was damaged. Though the shipping company certainly deserves much of the blame, I should also point out that the foam padding ring which surrounds the turntable base in its shipping carton was not fully in place in the damaged corner, with the result that there was no padding at that location between the base and the carton. The foam padding which should have been wedged between the base and the subchassis in the arm mounting hole area was also missing. In any event, we returned the second sample and requested a third. This time around there were no problems; nothing was damaged, everything appeared to be functioning properly, and setup went without a hitch.

Anxious to try out the Graham 1.5 tonearm on the new Cosmos, I first mounted it using the standard SME mounting board. It worked—the cutout and geometry of the Graham arm are designed to match an SME board—but the thickness of the board made it difficult to obtain enough downward travel on the arm to allow for fine-tuning the VTA in that direction. SOTA, working with Graham, devised a slightly thinner version of the SME board specifically for the Graham arm; it will presumably also work with the SME. This armboard was used in the latter stages of listening; I definitely recommend it if the Graham is your arm of choice.

All of my listening was done with the Graham arm. Cartridges included the Dynavector XX-1L, the Benz MC-3, the Kiseki Blue Gold, and the Threshold Renaissance. The preamp was the Rowland Consummate, the power amp primarily the Krell KSA-250. Loudspeakers were Apogee Centaur Majors.

The "sound" of the Cosmos in this system was more a reflection of the system itself than that of the turntable, with one possible exception. This system is totally different from the one in which the SOTA was auditioned for the original review. Save for the Cosmos itself, not a single component—including the room itself—is the same. This system is, overall, cooler and leaner than the earlier one. In particular, the Graham arm is tighter in the bass (and perhaps somewhat less palpable in the midrange) than the SME V. The Apogees also sound tighter than the B&W 801s, less extended in the bottom octave but leaner and better defined through the mid and upper bass. They are also somewhat brighter in the lower treble than the B&Ws.

Therefore, if I tell you that nothing I heard in the new system with the Cosmos—and any of the mentioned cartridges—gave me any inclination to change my original conclusions about SOTA's flagship model, you'll understand that I didn't hear exactly the same things, to exactly the same degree, that I heard during those weeks of auditioning nearly two years ago. What I did hear convinced me that the Cosmos remains a superbly neutral turntable. As I said in that original review, the Cosmos may strike some as a bit lean in sound; between my earlier and most recent sessions, a tendency toward the analytical remained the single common factor I can point to as likely representative of the turntable itself. It refused to fatten the sound of LPs. Since the present system itself shares that attribute, careful matching with an appropriate cartridge is clearly called for, and will pay dividends. Of the four cartridges used with the Cosmos in the present go-'round, I found the Renaissance, un—broken—in as it was, to provide the best combination of detail and warmth. But even then, the system could not be called lush or rich-sounding.

But with that single caveat, the Cosmos simply appears to get out of the way and let the rest of the system do its job. Which was exactly the feeling I had about it when I wrote my review. I wouldn't change a word of it today.

Well, perhaps just a few words, none of them relating to the sonic quality of the Cosmos. It's only fair to point out that the VPI TNT also evaluated in that review has undergone a number of updates since that time. Also, because of the overall balance of
the present system, I felt no need to remove the Groove Damper Mat which comes pre-stuck to the Cosmos’s platter. In the warmer-sounding, prior setup, I preferred the tighter sound which resulted with the mat removed. With the mat in place, concerns about dust trapped between the soft disc and the hard platter being ground into the disc under vacuum pressure are considerably lessened.\(^3\)

The vacuum pressure provided by the Cosmos is, however, a relatively mild one. While this is by design, it does not do a completely effective job in flattening anything beyond fairly innocuous warps. There is a point—reached well before the point of serious warpage—at which the less than flat record defeated the Cosmos’s attempts to form a seal and pull down the disc against the platter. Subjectively, I felt that the vacuum pressure on this latest sample was less than that of my original review sample. This was most apparent when removing the record from the platter after play; it was usually easy to break the seal with the current turntable, while the earlier one required some effort and finesse. The pump in that sample was actually noisier than that of the most recent one, but that noise was not a complete negative. With the first sample, you could actually hear when the pump switched from its startup cycle—when it creates the initial vacuum under the disc—to its maintenance cycle. With practice, you could tell by ear when there was a vacuum in the older Cosmos. With the present sample, it was necessary to check the rubber platter seal edge-on; it flattens out when a vacuum is present. I repeat my earlier suggestion that some type of vacuum indicator on the turntable base would be a useful touch; a simple circuit with an external LED indicator would probably be sufficient.

The new motor did give the new Cosmos slightly better speed stability than the old. Using a 1kHz test record tone and a frequency counter, the speed stability was ±0.1% (the earlier version had been 0.3%). Long-term stability was also better: the 0.3% to 0.9% speed decrease noted after 20 minutes or so of operation in the earlier version became a 0.2% increase in the newer sample. Not, in my judgment, anything to be concerned about.

I still recommend the Cosmos to those looking for a great, all-out turntable. But I also feel, as I did originally, that each potential buyer must carefully consider his or her specific situation before making such a substantial investment. If you don’t already have a large collection of vinyl, or are unwilling to search for those sources of (mostly used) analog discs—a search which will likely become an obsession all its own—then the Cosmos is not for you; unless, that is, your budget allows you to ignore cost/use factors. You don’t buy a yacht unless you have an ocean to sail it in. —Thomas J. Norton

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\(^3\) If you do remove this mat (it peels off easily), please follow my original caution to thoroughly clean the platter of residue with pure alcohol (not rubbing alcohol, please), lest that residue itself contaminate your discs.
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While preparing for his next concert three months later, Rachmaninoff decided to add four companion pieces to that first Prelude, making a set that Gutheil published as Op.3, the Morceaux de Fantaisie. While it brought Rachmaninoff much-needed international acclaim at a very early stage in his performing career, financially it represented a lost opportunity for, in 1893, Gutheil had paid him only 40 rubles for it (200 for all five pieces in Op.3), and it was only the royalties from his later recordings that brought him anything like justified remuneration.

Thus, for many years, Rachmaninoff suffered the mixed blessing of being asked to perform the Prelude when attempting to promote his other compositions. Eventually, he refused to play it. Huneker reported the outcome of a recital in 1918 that had not given his fans what they had expected: “All Flapperdom sorrowed last night, for there are amiable fanatics who follow this pianist from place to place hoping to hear him in this particular Prelude, like the Englishman who attends every performance of the lady lion tamer hoping to see her swallowed by one of her pets.” Predictably then, Rachmaninoff was invited to appear in England in 1898 in order that the people should be allowed to see the composer of the Prelude. To his horror, he arrived to find the piece published under various lurid titles, including “The Burning of Moscow,” “The Day of Judgement,” and “The Moscow Waltz”! Little wonder that he grew to spurn his offspring.

It’s fascinating to compare Rachmaninoff’s own performance of this Prelude, from an Ampico Roll recording of 1919 (Decca 425 964-2), with those of the eight performers considered here. (Numerous concert program discs containing one or two of the Preludes are available at present; space has
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only permitted me to consider the eight recordings of all 24 Preludes currently available in the *Schwann Opus and/or Gramophone* record guides.) Howard Shelley and Ronald Brautigam try to create an aura of mystery that is certainly consistent with the general tenor of their overall performances, but has little in common with Rachmaninoff’s own reading. It is the women, Constance Keene and Marta Deyanova, and the Englishman Peter Katin, who adopt the straightforward presentation and degree of clarity that Rachmaninoff himself displays. But then, it has to be said that none of the eight pull the tempo around with quite the same freedom as the composer!

Eleven years after the composition of this Prelude, Rachmaninoff wrote a set of ten more, which were published as Op.23; these succeeded the Second Piano Concerto by two years. In 1910, he decided to increase his output of Preludes to make a set of 24 in all the major and minor keys. The final group, Op.32, thus consisted of 13, and these appeared a year after the composition of the Third Concerto. They, like that Concerto in comparison with the Second, show a more marked harmonic and contrapuntal complexity; Rachmaninoff’s style had matured considerably into something inimitably his own.

None of the eight complete recordings available is particularly new, the oldest being an ADD transfer to CD of Alexis Weissenberg’s 1970 readings (RCA GD60568). A previous encounter with this artist’s approach to Rachmaninoff (cf my article on Rachmaninoff’s Second Sonata in Vol.13 No.9) still could not have prepared me for this bombastic and arrogant display. Weissenberg admits in the liner notes that he is “basically an aggressive person” who “could not behave otherwise toward an instrument” that he “tries to possess.” True, he shows the piano who is master with an insistence that wears all too quickly, but does he also need to do this to the composer? Here, I think, we have found the would-be lion tamer. “Music has structure, music is architecture, even in its most improvised moments,” he continues. “Unless it is presented this way, the audience will not be able to grasp what the musician is trying to say.” This certainly has a strong element of truth in it, but music should also speak to an audience’s emotions, and should not be used as a weapon to beat it about the head with until it submits to the artist’s control. When it comes to these performances, Weissenberg lacks subtlety and the imagination to see beyond the notes of the page. Admittedly, he has his moments, but these are rare in 72 minutes of ostentatious, tonally restricted, bravura display. And the recording leaves a lot to be desired, too: its closeness picks up pedal thump and the sound of his nails clicking on the keys, there are traces of wow, and clumsy edits abound. Unless you are wowed by Weissenberg’s undisputed technical prowess, I suggest that this is not the disc to tell you more about Rachmaninoff.

If Peter Katin (Olympia OCD-110 A/B) is equally fearless, how much more is he prepared to listen to that inner voice that should be controlling the effect of the notes. Thus it is that his gestures are never greater than the music itself, despite an easy generation of excitement by the sheer force and power of his statements. His readings take you to the extreme of every emotion, without ever indulging in mawkish sentiment. If the beautiful D-major Prelude (Op.2 No.4) is relaxed and serene, it is also guided by a sense of purpose; though No.6 is a delicately drawn song, Katin is confident enough to make it sing without lingering over it too sweetly. Nor is he afraid to allow the simplicity of the Siciliana-like Op.32 No.11 to govern his playing, for he has studied every Prelude with an eye to its overall shape and purpose.

On the other hand, he plays with a precision and crispness that seems at times just a little too austere and ungenerous. Op.23 No.8 is a case in point, the brittle cascades of right-hand sixteenths producing an agitated rather than untroubled mood. (Ashkenazy here makes the notes bubble more playfully over the left-hand melody.) Katin’s 8th Prelude from the later set, though, the A-minor “Toccatas,” demonstrates just how much his boldness and commitment can carry the piece—and how different from Weissenberg’s more technical exercise it proves here. But it is necessary to listen through the recording quality of Katin’s set in order to enjoy his performances. Although not stated anywhere in the insert notes, these recordings were originally laid down in 1971, and sound it. There is a considerable amount of hiss to penetrate, and the piano sound is harsh and jangly at the best of times. It is, in fact, amazing just how lyrical.

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some of these Preludes sound under the circumstances.

In 1985, Decca coupled Ashkenazy’s ’76 recording of the Preludes with his reading of Rachmaninoff’s Second Sonata recorded six years later, offering these as a 2-CD, mid-priced set (London 414 417-2). Sonically, Decca has done a fine job: The piano is quite closely recorded but there is good clarity at both extremes of the dynamic spectrum. And there is no doubt that Ashkenazy understands and empathizes with the brooding nature of this music, both as a compatriot and as a musician. I feel that he is often at his best with Rachmaninoff, showing the greatest range of tonal color, a greater sensitivity of touch than in his Chopin performances (which often leave me bewidered by their harshness), and an amazing technical skill at unraveling and voicing Rachmaninoff’s multi-textures. From the second Prelude of Op. 23, a flamboyant and potentially clangorous affair, he establishes a quite distinctive quality: a great sense of controlled power that is also capable of immense subtlety, and a warm realization of the pealing bell sounds that were an intrinsic part of this composer’s inspiration; the famous G-minor Prelude, Op. 23 No. 5, and Nos. 3 and 10 of Op. 32, demonstrate these qualities to perfection. But for me, Ashkenazy is at his most persuasive in the lyrical, multi-melodic pieces. Nos. 4 and 10, Op. 23, and the wistful duet of Op. 32 No. 7 are exquisitely beautiful, with tunes emerging from the texture with great delicacy and refinement, and a deceptive facility.

Howard Shelley captivates his audience by quite different means; he seems less concerned with transcending Rachmaninoff’s score by the searching out of its inner poetry than with the creation of a spurious, soft-edged, dreamy, almost impressionistic atmosphere of mystery that, to my mind, is entirely misplaced. This is heightened by a grainy, reverberant acoustic (and a touch of pre-echo) not at all typical of Hyperion’s usually high standard of clarity, even back in 1983 when these recordings were made (CDA66081: Op. 23 coupled with Op. 3 Morceaux de Fantaisie, and CDA66082: Op. 32 coupled with the F-major Prelude, 1891, and the D-minor Prelude, 1917; only 48 minutes of music on the second disc).

Shelley is also guilty of overindulgence, usually interpreting tempo indications very much on the fast side and going overboard with such directions as the *poco accelerando* on Op. 23 No. 5. Nevertheless, it cannot be denied that he is a superb technician and excels, if not surpasses his rivals, in those Preludes that rely on agility and precise, deft fingerwork: Op. 23 Nos. 7 and 8, and Op. 32 Nos. 2, 8, and 12 are fine examples. But, taken as a whole, Shelley’s performances often fail to get to the heart of the music for me, with no true sense of purpose, momentum, or direction to shape them adequately. Contrary to the opinion of many of my colleagues, I would not choose to return to these performances in preference to many others.

There could be no greater sonic contrast than between these Hyperion discs and Protone’s issue of Constance Keene’s performances, allegedly set down in 1986 (CD 1101). The latter are close and raw, with little authentic ambience. But their very lack of refinement tells us a great deal about this artist’s individual qualities. She could never be accused of over-interpretation, tending at times to sound almost reticent, though not, I think, through any technical deficiency. But generally, she adopts a no-nonsense approach, making up for what she lacks in poetry with a commitment to clean, neat readings that are often highly attractive for their freshness. One can almost imagine her thinking through her plan of attack on Op. 32 No. 4. This is an extremely difficult and dramatic work; in Peter Katin’s words, it is “an extraordinary piece of music, sinister, terrifying. All through there are rumblings, eruptions, sudden cries of horror, and when the final tremendous accumulation of tension is unleashed, there is a headlong flight to destruction.” Keene doesn’t attempt to meet the vigor and power of this piece head-on, for she would lose the battle. Instead, she searches out the detail that other performances miss, deriving interest from the treble and bass tunes rather than succumbing to the insistent, rampaging triplet figure. At the *presto possible* she doesn’t bolt to the cliff edge with a lemming-like disregard for annihilation, as Weissenberg does, but keeps everything under perfect control, and this quest for detailed clarity certainly works.

Dutch pianist Ronald Brautigam also approaches these well-known pieces from a totally individual standpoint and finds many new vistas from which to view them.
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Stereophile, March 1992
First they follow each other in quick succession, which holds them together better as a set. It soon becomes evident that he, like Ashkenazy, has a formidable skill at drawing out the melody, as in the middle section of Op.23 No.2, in which the left-hand thumb alone carries the sparse tune. But, like Shelley, he adopts an aura for the Preludes that is more akin to the French than the Russian school, preferring to create a wash of sound with the help of the sustaining pedal. And yet he uses this to best effect in those Preludes that are also realized most successfully, though in a completely different way, by Shelley. Of the two, I much prefer Brautigam for his sensuality and innate sense of timing, and he, rather more so than any of the other pianists considered here, is able to sustain the nobility of the final Prelude in a way best fitting to bring the sets to a close. To enjoy his performance to the full, though, it is necessary to select a volume setting very carefully; otherwise, the over-reverberant acoustic and distance of the piano tends to reduce its power and impact (Et cetera KTC 2013).

Finally, there is a Nimbus recording which favors a cavernous but nonetheless bright acoustic to set off some very fine performances by the young Russian pianist Marta Deyanova (NI 5094). I admire the way she is prepared to unleash a great passion, often in the most unexpected places. For example, she sets out in Op.23 No.4 at a cracking pace and produces excitement rather than innermost yearning at its climax. Likewise, in Op.32 No.12, she finds a scintillating tone for the right-hand sixteenth groupings that sets the sad tenor melody off to great effect. Yet, while she has the requisite power and confidence for the most virtuosically taxing Preludes in both sets, she is not always able to sustain their complex rhythms without notes being swallowed up in the process. This is most obvious in Op.23 Nos.2 and 9, and Op.32 Nos.4 and 7—but no one can come near her for beauty and delicacy of dynamic shading in the ethereal song of Op.32 No.5.

Ideally, then, it would be pleasant to have Deyanova, Brautigam, and Katin's performances to dip into, but if I am to choose an overall recommendation, it has to be Ashkenazy. He alone gets to the heart of many one of these exquisite miniatures and turns it into a sparkling gem, no matter what the core of its emotions.
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Stereophile, March 1992
Bernard Haitink delivers the third installment of his Ring-in-progress, Siegfried (p.183); it’s not only the best of the series so far, it’s one of the best Siegfrieds ever recorded—and it sounds great. Meanwhile, Paquito D’Rivera joins labelmates Fred Hersch and Kenny Rankin in three excellent new audiophile jazz discs from Chesky (p.193).

Andrew Schenck and Koch International are apparently very strong advocates of Samuel Barber’s music, as three of the four discs reviewed here bear witness. I can see the attraction, as long as you’re not worried by the fact that much of its idiom and orchestration pay homage to the traditions of late Romanticism. If you can accept that, then I think Barber handles these parameters with great skill.

I particularly like the program chosen for the first disc even though, in terms of value for money, it should have been extended. It opens with Fadograph (1971), a short piece whose gently climactic central section is framed by some beautifully hypnotic and mystical sounds, and ends with Third Essay of 1978, which demands a little more piquancy than it receives here but is, nevertheless, persuasive in its sense of commitment. Between these, we are trans-
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The Model CE1000 Cable Enhancer sounds like snake oil — another high-end gimmick — but it truly works "miracles" on cables. At $1790 it's a must buy! See the review in the January issue of The Absolute Sound page 161.

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ported back some three decades with the Medea Suite, an evocative setting of the Greek legend. The Suite is more thickly scored than the music written in the previous year for Martha Graham's ballet, Cave of the Heart, one of the pieces given by Schenk and the Atlantic Sinfonietta on the second disc. I prefer the more sensuous sounds of the Suite, and the New Zealand SO responds well in terms of color, if not so well by way of attack and thrust. Their "Young Princess" is languid by comparison with the Atlantic Sinfonietta's, and "Medea" could well be a little more sinister. However, the recording is so much better than for the honed-down ballet, which is altogether too closely focused and treble-biased to create more than a theater-pit atmosphere.

However, on the same disc, the Atlanta gives a wonderfully fresh performance of Appalachian Spring in its original nine-section, ballet—music form and chamber orchestration. It's good to hear the music that was eventually left out of the Suite, even though it's obvious why it was not included in Copland's final selection. The natural acoustic used for the recording allows the music to sparkle in its unmistakable colors, making this a very attractive proposition despite the shortcomings of this recording of Cave of the Heart.

On the third disc, Barber is represented by the ballet suite of wittily stylized dances, Souvenirs. It cannot be considered great music, but must be accepted for what it is, "a divertsissement in a setting reminiscent of the Palm Court of the Plaza Hotel in New York, the year about 1914, epoch of the first tangos." Again, the New Zealand SO performs well, with obvious enthusiasm, and the recording is sweet and natural, apart from a temporary loss of sharp focus in the hesitation-Tango. Coupled with this is Menotti's ballet suite, Sebastian, which I was disappointed to find had little of the charm and sensibility of Amahl and the Night Visitors, three extracts from which are given most beautifully here. By contrast, the orchestra shows less confidence with Sebastian, and makes an embarrassingly scrappy scramble of the allegro energico, Baruffa. A disc of limited interest.

Kirshbaum's Cello Concerto reading is a powerful, anguished affair, dwelling on melancholy and despair. It works easily as well as Yo Yo Ma's more refined view of the work (CBS 44900, coupled with Britten's Cello Symphony), so this is a case of try before you buy. However, if you want a really good performance of the rarely recorded Cello Sonata, then go for this disc. Kirshbaum and Vignoles make an excellent team, tempering the driving intensity of the outer movements' principle themes with an enthusiastic ardency for the breadth of its Romantic utterances. The coupled, ubiq-

uitous Adagio for Strings is the only weak link if you like this work with sugar on top. Personally, Saraste's cooler approach to it struck me as not less passionate and involved, but it is certainly of a different heat than most performances.

The recording throughout, despite the mixed genre of the disc, is good: a little hard and bright, but relevant to the interpretations here. The only hiccup comes just after the opening tutti of the Cello Concerto's Finale; if there isn't a tape cut just before the soloist's entry, it certainly sounds like it.

—Barbara Jahn

BEETHOVEN: Symphony 5
SHOSTAKOVICH: Symphony 9
Sir Georg Solti, Vienna Philharmonic
London 430 505-2 (CD only). John Pellowe, eng.; Christopher Raeburn, prod. DDD. TT: 57:02

Sir Georg Solti appears to be joining the growing number of conductors who prefer to record "live" rather than "studio." The occasion for this recording was the opening concert of the 1990 Wiener Festwochen, an event at which Solti has rarely appeared. Although he has continued to perform at the Wiener Staatsoper, and record opera with them for London Records, his recording and concert appearances with the Vienna Philharmonic have been infrequent during his musical directorship of the Chicago Symphony.

Solti has a considerable number of detractors, who point to his undue emphasis of certain details, his impulsiveness, his propensity for forced dynamics, especially at the louder end—especially with the CSO—and a range of interpretations which run the gamut from bland to hyperactive. Others have puzzled over the disparity between the live Solti and the recorded Solti, well illustrated by the difference between the deeply inspirational 1978 Solti/CSO Albert Hall performance of Bruckner Symphony 7 on a London laserdisc and their rather uncommunicative 1989 London studio recording.

With two complete Solti/CSO Beethoven Symphony cycles to their dubious credit, one would expect London to think twice before giving Solti a third shot at the Fifth, except that, as noted, this is an actual concert, and a rather particular one at that. As such, this recording contains one of the best new Beethoven Fifths to reach the public in many years. I'm not sure if it's possible anymore for there to be a single definitive Beethoven symphony recording, but here at least we have a fresh, spontaneous, unaffected approach which is as much about the music itself as it is about the way the VPO responds to the leadership of its guest-conducting maestro.

Perhaps not burdened by Beethoven's years of overly sanctified adulation, the Shostakovich 9 receives a performance which does as much

Stereophile, March 1992

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justice to the work's dark side as to the more obvious comic aspect which sets this symphony apart from those which surround it.

The VPO displays no propensities whatever for the so-called "mid-Atlantic" style that has shown itself in Solti's recent recordings with the London Philharmonic, and not the vaguest hint of the excessive playing which Solti has inadvertently drawn from the CSO. Admittedly, the VPO woodwinds and brass do not have the same idea of technical development, control, or polish as their CSO counterparts, but some listeners find their concept of style more amiable. Unison string phrasing, particularly in the violins, is striking to hear in this recording, and points up some of the remaining differences in musical tradition which continue to be scrupulously maintained in Vienna and points east. In points west and in the US, our strings have evolved more power, but, one asks, at what cost to expressive flexibility?

An arresting impression of the Musikvereinsaal's spatial characteristics is unfortunately spoiled by the full silences during the pauses between non-segue movements in each symphony. Moreover, because of the uneven and totally artificial manner in which the soundstage collapses between the last note and the start of the applause of the Shostakovich, I suspect the employment of some type of ambience synthesizer or enhancer. A pity; otherwise, this recording does not exhibit the multi-mono mixing, frustrating lack of detail and presence in the inner voices, or cavernous exaggerated bass of so many London recordings over the years. Now that they're at least trying to be subtle and realistic, they should learn to play with their toys a little more carefully.

—Richard Schneider

**BRAHMS: Complete Works for Piano**


Gerhard Oppitz, piano


Pianists who have performed a more or less integral version of the solo works of Brahms on disc are not many: Julius Katchen in the past appears to have recorded the greatest number of works, though at present I believe only one CD of his is available in the US. Two new "complete" performances have been announced, those by Martin Jones and André de Groote, though these have either not yet arrived or are still in progress. Which brings one to the question of how to define "complete." In the case of the 39-year-old Bavarian-born Gerhard Oppitz, it is all the solo piano pieces with opus numbers, but there exists as well a good CD's worth of other works he doesn't include, among others the D–Minor (sexet) Variations, the studies based on other composers (including the Bach Chaconne for left hand), and the early, Bach-influenced suite movements (I recommend Lydia Artyomiw on Chandos 8410 for some of the latter).

How does one describe Oppitz in the standard Brahms? First, his technique, from the standpoints of digital accuracy and velocity, is really breathtaking. He does, however, seem to represent a peculiarly schizophrenic breed of modern player in that he can be tonally hard-edged in louder passages, and quite ravishing in softer, more poetic moments. In fast sections, he sprints far more rapidly than any of the older pianists whom the annotations claim he admires: his mentor Wilhelm Kempff, or Edwin Fischer, or even Walter Gieseking. At the other extreme, in slow pieces, he is often far slower than most. The lyrical and subdued Op. 117 No. 1 Intermezzo takes Oppitz 5:32, as opposed to 4:45 for Backhaus. So deliberate is Oppitz that all three of the Intermezzi making up the complete Op. 117 take him 19:00; in contrast, Lupo plays them in 16:50.

Timings may not always be an accurate indication of performance variables, but I would posit that Oppitz at this stage of his career is severely inclined toward over-interpretation, whether in his extraverted, neon-lit, but nevertheless directionless treatment of the most brilliant Brahms (for example, the Op. 119 No. 4 Rhapsody is almost brutal in its granite-toned intensity), or in his equally meandering, self-indulgent ruminations through so many of the introverted lyrical pieces. Yet one cannot help but admire his playing at those times where tempo, mood, and style seem perfectly to coincide, when those deeply felt, ravishing moments do occur. The set, perhaps because of all these disparate elements, remains for me a maddening one. The large-scaled piano sound, especially in loudest passages, is not especially ingratiating tonally.

—Igor Kipnis

**BRAHMS: Serenade No.1; Academic Festival & Tragic Overtures**

Michael Tilson Thomas, London Symphony

Sony SK 45932 (CD only). Michael Shedy, eng.; David Mottley, prod. DDD. TT: 69:50

Those unfamiliar with the two serenades Brahms composed in his late 20s have missed some of his loveliest music. The one featured here has a vibrant joyfulness and many moments that foreshadow the great works to come. Especially winning are the exuberant first movement, a second movement that anticipates the Scherzo

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of the great B-flat Piano Concerto, and a hauntingly beautiful Adagio—Brahms's longest orchestral slow movement—that is stamped with the composer's strikingly individual harmonic boldness.

Were it not for a fussy first movement that is not fast enough to meet Brahms's *Allegro molto* specification and is further marred by some tasteless rhythmic manipulations that break the line and undermine structure, Thomas's performance would deserve an unqualified recommendation. He is not, to be sure, inspired, and his treatment of the tender Minuet is a bit perfunctory. But he is never stodgy, and he keeps the slow movement going so that it does not seem excessively long. Furthermore, the prominent horn part has a rich color matched in few other versions.

For all its strengths, however, the performance lacks the tautness and emotional range projected by Stokowski and Kertész. Neither of their versions is listed in the current *Schwann Opus*, but the Kertész account (coupled with his equally distinguished reading of Brahms's Serenade No.2) is available, I believe, on a budget London CD. With its 1968 sound holding up quite well, it comprises a far better buy than this Sony release, which is filled out with slack, tensionless readings of Brahms's two familiar concert overtures. Sony's recording is rather close and flat in perspective, but musical in timbre and generally pleasant.

—Mortimer H. Frank

**D'ANGLEBERT: Harpsichord Works**
Arthur Haas, harpsichord
Wildboar WLBR 8802 (CD only). Joseph Spencer, prod.; Peter Nothnagle, Michael Hesse, engs. DDD. TT: 62:51 (not 65:48, as given)

**EDWARD PARMENTIER: 17th-Century French Harpsichord Music**
Edward Parmentier, harpsichord
Wildboar WLBR 8802 (CD only). Joseph Spencer, prod.; Michael Lynn, eng. DDD. TT: 61:27 (not 71:13, as given)

Wildboar founder Joseph Spencer assured me that I would hate the Parmentier recording, because of the radical temperament employed. I'm sorry to disappoint him, but I rather like both of these CDs, not least because of the tunings used. I had argued that Bach did not appear to favor radical meantone tunings; I by no means meant to imply that no one did. Seventeenth-century French composers (among others) appear to have positively adored these sorts of temperaments, which lend a certain piquancy to the sound of some keys.

Both of the performers here are accomplished technicians, with a strong sympathy toward this music. Haas is perhaps a bit more adventurous, a little less afraid of ornament, but both give tasteful and varied renditions. Haas plays a period instrument, a restored 1785 Germain, while Parmentier uses a Keith Hill copy of a 1640 Flemish instrument. The former "sings" a bit more sweetly, but the Hill has an exceptionally powerful lower register. Parmentier gets the more radical of the tunings: a 3/4 comma meantone. This sounds lovely in the Louis Couperin Suite in D, which Parmentier plays wonderfully, but the Suite in C by Johann Froberger fares less well. C-minor is not the ideal for this tuning. But, as Igor Kipnis points out in his notes to *The English Harpsichord*, the ear can accustom itself to almost anything. (There may, however, be some significance to the fact that Spencer employs someone named Barbara Wolf to prepare the instruments used here.)

Most of the music performed on these discs is excellent, although you'll understand after hearing his works why Louis XIV got rid of Jacques Champion de Chambonnières. (I wonder, though, whether the galliards marked *lentement* by D'Anglebert were not akin to the Slow Courantes with which the Sun King tortured his audiences.) I enjoyed very much the Couperin suite above-mentioned, as well as D'Anglebert's transcriptions of lute music. The sound is absolutely gorgeous, especially on the Haas/D'Anglebert disc. Whatever we may say about digital, it hasn't got pre-echo, which can ruin harpsichord and piano recordings. Two very worthy additions to the harpsichord catalog.

—Les Berkley

**PISTON: Symphony 6, The Incredible Flutist, Three New England Sketches**
Leonard Slatkin, St. Louis Symphony
RCA 60798-2-RC (CD only). William Hoekstra, eng.; Joanna Nickrez, prod. DDD. TT: 57:02

**PISTON: Symphonies 2 & 6, Sinfonietta**
Gerard Schwarz, Seattle Symphony (Symphonies), New York Chamber Symphony (Sinfonietta)
Delos DE 3074 (CD only). John Eargle, eng.; Adam Stern, prod. DDD. TT: 66:55

Although Piston is hardly unknown in American music, his appearances on record have been spotty. During a near lifelong tenure on the Harvard music faculty, his pupils included Elliot Carter and Leonard Bernstein; the latter programmed Piston during his tenure as Music Director of the NYP, but recorded none of his works.

Piston's music defies pigeonholing. He never indulges himself in the melodramatic rhetoric which makes Barber so appealing to middlebrow listeners eager to identify with something "modern." There's none of that "Norman Rockwell" atmosphere which makes Copland sound so "American." Piston is more apt to suggest the heightened reality removed from reality of Thomas Hart Benton, details of whose

1 Which is why I can't understand the audiophile prejudice against DMM, which virtually banishes pre-echo.

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work grace the covers of RCA's ongoing American music series with Slatkin/St. Louis.

The record business is about to familiarize us with Piston in a really big way. I hope that, after a deart of Piston, we're not to be swamped in needless duplication. Choosing between these Sixths is a hard call, and may boil down to the choice of accompanying repertoire.

Slatkin/St. Louis gives us Piston's only programmatic or descriptive music: the Suite from The Incredible Flutist, originally composed in 1938 as a concert ballet for the Boston Pops; and Three New England Sketches, a work from 1959. Listeners expecting to be handed clear visions of the title movements of the latter may be disappointed, particularly with regard to the outer movements, "Seaside" and "Mountains." It seems to me that as a tone painter, Piston is but a kinder, gentler Ruggles. However, the second movement, "Summer Evening," is filled with birdsong and insect sound, much like the haunting nocturnal music of Bartók.

The Incredible Flutist is a high-quality, fun pops or children's concert piece which Slatkin and his forces play to a fare-thee-well. One of its more amusing passages, "Circus March," contains some effects which grew out of a raucous improvisation by members of the Boston Pops while rehearsing the premiere: midway whistling and cheering, and at the end, the sound of a barking dog. The liner notes give credit for "Canine Contributions" to Margie Slatkin & Bud. How would you like to be a fly on the St. Louis Symphony locker-room wall for the humor which must have inevitably risen from this very special brand of nepotism?

Schwarz/Seattle's next installment of Piston, which may well be available by the time this review is published, will contain Sketches as a comparison to Symphony 4. For the current recording, Schwarz has chosen early pieces: the Sinfonietta from 1941 for fairly light forces, and Symphony 2 from 1943-44, for which Piston won the Music Critics' Circle Award. Sinfonietta, which was recorded at the 92nd Street Y with the New York Chamber Symphony, turns out to be a work of considerable substance for its title and Haydn-scaled orchestra.

Symphonies 2 and 6 find us back in the Seattle Opera House with the Seattle Symphony. For a relatively youthful work, Symphony 2 covers a broad emotional range, from dark and pessimistic moods to flashes of raptitude. Indeed, Piston's New England origins seem most palpable in this work.

Symphony 6, the work common to both recordings, was commissioned for the 75th Anniversary of the Boston Symphony, premiered and recorded by Munch/BSO for RCA in 1955. Although long out of print on vinyl and not yet reissued, the Munch/BSO remains one of the treasures of its period and provides a genuine challenge to newcomers.

Each performance displays its own degrees of excellence, and each in turn suffers ever so slightly when compared to Munch/BSO. Each conductor draws a broad, healthy, full-bodied response from his orchestra. I find Slatkin over-studious and too slow with the scherzo, a fleet and nimble study in lightness with featured percussion. Each conductor takes the Finale too fast. One understands the logic. The Adagio sereño which precedes it is very serious in tone, and the rollicking Finale is its total opposite. Munch, however, known for very fast tempos, seems to have understood the indication of Allegro energico as an implication of mood and style rather than all-out velocity.

Production factors have been covered by two of the best audio teams in the profession, each working with excellent acoustic sites. I like the very open and spacious feeling of Hoekstra's miking in St. Louis. In comparison, Eargle's sound seems just a bit closed-in, but I'm drawn to his deeper bass. Schwarz's seating plan for the strings, almost unique today (violins left and right, violas right, cellos left, basses rear) gives his recording a special interest. As I said, it's a very close call.

—Richard Schneider

RACHMANINOFF: Vespers
Karl Dent, tenor; Robert Shaw Festival Singers, Robert Shaw

This may not be the greatest performance of this stunning work available, but it certainly sounds better than any other. Telarc has, as usual, given us a recording of such clarity, honesty, and depth that we feel, rightly, as if we're at an "All-Night Vigil" (the correct name for the piece) in a church (it was recorded in one), but without the usual distractions. Rachmaninoff's intense vocal meshwork can be basked in here, and it's a pleasure to analyze and enjoy.

There are certain signposts we always return to when listening to an unfamiliar performance of a familiar work. In these Vesper, I always go straight to the close of "Nyne Óptushchayeshi" (track 5). That's the point at which the basses descend slowly to a bottom B-flat (!). Herein Shaw's singers arrive comfortably, but they don't shake the soul as other choirs have. More important, though, I can't find any overt emotionalism in the performance in general—it's handsome, easy on the ear (even quite beautiful), and a fine introduction to the work; but, well, it's a bit too Western.

Tenor Karl Dent is a good, clear-voiced soloist, and the choir never disappoints, with particular praise going to the women, who invariably outshine their Russian counterparts. Shaw's

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tempi are properly serious (Rostropovich's on Erato seem a bit too fast), and the overall impression is positive. But I must repeat: This lacks soul. It may not get in your way, however, and so I can recommend this disc energetically.

—Robert Levine

SAINT-SAËNS: Samson et Dalila
José Carreras, Samson; Agnes Baltsa, Dalila; Jonathan Summers, High Priest; Simon Estes, Abimelech; Paar Burchuladze, An Old Hebrew; others; Chorus & Symphony Orchestra of Bayerischen Rundfunks, Sir Colin Davis
Philips 426 243-2 (2 CDs only). Mike Bremer, prod.
DDD. TT: 2:02:53

In this gorgeously recorded, brilliantly conducted account of Saint-Saëns's not-quite opera, Sir Colin Davis has managed to comfortably wed the work's oratorio and opera elements; the dramatic whole is more viable here than I've ever heard it before. The vulgar Bacchanale music sounds lusty rather than stupid, Dalila's sensuality is clear and alluring, and the Hebrews' lamentations and protestations, as well as the Philistines' mockery, are all finely detailed. Davis is nicely assisted by orchestra and chorus, and the production team has balanced the proceedings well.

Agnes Baltsa is a wonderful Dalila. Her voice may lack the earthiness of, say, Rita Gorr, or the sheer beauty of Risé Stevens, but she draws us a Dalila to reckon with. It is much to her credit that her second act is believable from start to finish, and luxurious to hear as well. Carreras is another story. I've tried too hard to hear in his latest recordings the voice which used to be. To be sure, there are still moments when his powerful declamation in middle voice is stunning, but there's no forgetting or excusing the strained, wobbly notes above the staff: His B-flat at the close of "mon coeur ..." is monstrous, and the engineers seem to have turned up the volume at that moment to accentuate its horror. There's less to admire than shun in his singing, although his reading of the part is intense and telling.

Jonathan Summers is a good, scenery-chewing High Priest, but both Estes and Burchuladze come close to disgracing themselves with their blank performances. I can recommend this set for Davis's and Baltsa's intelligence and passion, but be warned about Carreras.

—Robert Levine

WAGNER: Siegfried
Siegfried Jerusalem, Siegfried; James Morris, Wanderer; Peter Haage, Mime; Eva Martón, Brünnhilde; Theo Adam, Alberich; Jadwiga Rappé, Erda; Kurt Rydé, Fafner; Kiri Te Kanawa, Forest Bird; Bavarian Radio Symphony Orchestra, Bernard Haitink
EMI CDS 7 54290 2 (4 CDs only). Wolfram Graul, prod.; Martin Wöhr, eng. DDD. TT: 3:49:25

Das Rheingold is not even properly part of Der Ring des Nibelungen, which Wagner called a trilogy; it's a brief, concise prologue from which no one expects a great deal of passion or emotional catharsis. After all, there's not a single human being in the entire opera. Opera-goers do expect a great deal of Siegfried, however, and are usually disappointed. At four hours, it's full-blown Wagner, and is usually named not only as everyone's least favorite Ring opera, but everyone's least favorite opera, even by otherwise perfect Wagnerites. It's not hard to see why: With the exception of the Forest Bird's four tiny songs, there are no female voices for the first 3 hours, and it's notoriously difficult to make the young Siegfried believable or sympathetic. As actors say, "the lines give you nothing."

However, for most of my late teens, Siegfried was my favorite Ring opera. It contains some of Wagner's most consistently interesting scoring; in fact, Siegfried served as my primer in learning the instruments of the orchestra, particularly the viola, whose orchestral role, even though I'd played in school ensembles for years, had until then remained a mystery to me. In Siegfried Wagner seemed to have almost single-handedly invented the viola as a romantic voice of dark forboding, exponentially expanding the instrument's orchestral language; page after page of the score read like excerpts from some vast, dark, High Romantic Concerto Grosso for the viola section—with vocal obbligato. Still, Siegfried remains, for most, the most difficult opera for which to acquire a taste.

But in his third installment of EMI's new studio Ring cycle, Bernard Haitink conducts a Siegfried for people who hate Siegfried. This recording works in every way—dramatically, musically, sonically—as Haitink continues to confound all expectations with his exciting, straightforward, musical storytelling. Haitink's conducting has generally been more respected than loved, more praised than listened to; words like "correct," "careful," "reverent," and "refined" appear far more often in reviews of his recordings than do such adjectives as "heartfelt," "powerful," "passionate," or even "warm." The contrast of EMI's cycle to the other Ring-in-progress, Levine's for DG, is thus all the more puzzling: How could Levine, the Metropolitan Opera's dynamic, ambitious man of the theater, consistently turn in such turgid, lackluster conducting as in his Rheingold and Walküre? (I emphatically except his conducting in the recently released Götterdämmerung, reviewed last month.) Perhaps Haitink, relatively unused to depending on the added excitement of a stage filled with sumptuous sets, dancing lights, and moving singers, instinctively knows that what doesn't get on tape doesn't count.

Regardless, this Siegfried, only the fourth stu-
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dio recording ever made of the opera, is a tri-
umph, right up there with the justly legendary
recordings of the first, Solti's, and the live Bay-
reuth recordings of Böhm and Krauss (my
other favorites). Haitink never overemphasizes
here (no surprise), but neither does he ever hold
back (surprise!), always rising to the occasion
with orchestral foils exactly supportive, per-
fectedly contrapuntal to the dramatic action, whe-
ther staged or implied. And I always appreciate
a conductor who can show me new things in
a score I thought I knew: in Siegfried's Act I
Forging Song, Haitink brings out a foreshadow-
ningly frightening (by me) dissonance in the
horns just before "Hoho! Hoho!"; Act II's
"Forest Murmurs" is the tenderest I've heard;
and the familiar lullaby-like music of Act III's
"Ewig war ich," excerpted in the Siegfried Idyll,
is the most affecting reading I know, slower
than Goodall and Gould, yet far more of a
carass.

But Haitink is equally capable of carrying
a big Wagnerian stick and speaking not softly
at all, painting with a broad brush without
missing a single detail. The preludes of all three
acts are marvels of atmospheric scene-setting
here, particularly that of III: Haitink makes this
monumentally restless music heavy, yet still
it moves (and yes, producer Wolfram Graul, I
do appreciate all that beautifully recorded thun-
der and wind!).

Unlike so many Ring recordings—Karajan's
(DG, not Hunt/Memories), Janowski's, Levine's
—there is never any doubt that Haitink con-
sistently holds dramatic integrity higher than
musical, though never at the latter's expense;
a delicate and difficult balance. The characters
are always (with one exception; see below) fully
rounded in the pit and on the stage, the singers
creating living, breathing characters with com-
plex motives and believably rich inner lives. All
of this makes the three-fourths of Haitink's Ring
so far released more vital, more consistently
exciting—more fun—than any studio or stage
cycle since the very first—Solti's. And nowhere
is "fun" more important in the Ring than in
Siegfried, the ultimate "boys opera," which so
often ends up a very unfunny unintended par-
yody of Never Never Land ruled by a middle-
aged, overweight, gallumphing, loudmouth
braggart Pan.

Perhaps the most telling difference between
the Haitink and Levine Ring recordings is that, when listen-
ing to the latter, I'm always aware that I'm
hearing singers and players, that I'm being
"performed at." Then I put on the Haitink: a
sonic window opens onto a magical universe of
real beings meeting real challenges, triumphs,
tests, and tragedies; a world that has been going
on long before I loaded the first disc into my
player, and will continue long after | remove
the last. I can't imagine wanting any more from
a recording.

The singing satisfies almost as uniformly as
the conducting. Over the past 20 or so years
Siegfried Jerusalem has, from not very impres-
sive beginnings, grown into a Wagner singer of
formidable skill, stamina, and stature. This
all-but Heldentenor is intelligent, strong-voiced,
a good actor at ease on stage, has almost no
trouble with notes or volume, and seems—
as he did in Levine's televised Ring—to enjoy
himself immensely as Siegfried. Unlike the for-
midable Windgassen, one of the most brilliant
singers ever to assume the role, Jerusalem is
never in the position of having to sing around
his own voice—it's become an instrument as
polished and strong as Nothing itself. Only
in a very few moments is there even a hint of
strain; otherwise, Jerusalem fairly tears into
the role like a teenaged Errol Flynn, calling on
Youth's endless reserves and easy relaxation.
And his attempts to mimic the Forest Bird on
the "stupid reed" comprise the funniest—and
not at all precious—acting of the scene I've ever
heard. It sounds as if Jerusalem's actually playing
that sour English horn.

But in Act I (though not in II or III) Jerusalem
shares with Peter Haage's Mime a tendency
toward a rote observance of the score's writ-
ten rhythms. This works from time to time for
dramatic effect, but all the time amounts to
song-song. I prefer a looser, more creative way
with a phrase.

But not James Morris's way! For all his beauty
of voice and presence of mind and heart, Morris
goes to the opposite extreme. Again, as in Le-
vine's PBS Ring, Morris's Wanderer is almost
too relaxed, at the expense of dramatic tension
or (more to the point) emotional investment.
His Act I scene with Mime is all mellow and
avuncular, and while those elements are cer-
tainly germane, Wotan's vital interest is missing.
However, when compared with his stiff, youth-
ful, grasping Rheingold Wotan, it's clear that
Morris has a firm grasp on the evolution and
growth of Wotan—by far the most complex
character in all of opera. And, by Act III, Morris
has awakened sufficiently to rouse not only the
sleeping Erda but any drowsy listeners as well,
and his first and last meeting—triumphant,
tragic, Oedipal—with his rowdy, unwitting
grandson Siegfried, is thoroughly, deeply felt.

Peter Haage's Mime is so good, so naturally
right in this large but thankless role, that I barely
noticed him as singer or actor; he strikes a per-
fect balance between the hilarious if over-the-
top buffoonery of a Gerhard Stolze (Solti) and
the merely excellent singing of the too-polite
Peter Schreier (Janowski). It was wonderful to
hear a fully fleshed-out person actually hitting
all the notes, and the Mime/Alberich confron-
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tation in Act II raises blisters.

In the four smaller roles, Jadwiga Rappé is a strong if wobbly Erda, a classic clotted-cream contralto; Kurt Rydl's Fafner is technically perfect if somewhat emotionally distant; and Theo Adam continues his late-career exploration of Alberich's noble desperation with more melancholy and no less angst than he did in Haitink's "Rheingold." But Kiri Te Kanawa as the Forest Bird (!) is a delight as unalloyed as it is unexpected — by a long shot, she's the best I've heard in the part. Wagner's/Haitink's settings of the Forest Bird's four brief Act II "songs" are absolutely magical, enchanting, breathtaking, and Te Kanawa's sheer beauty and freshness of tone are, for once, in the service of a lively interpretation (though I don't think even the sharpest-eared native speaker could unravel her German).

But just as there are no perfect Ring cycles, there is no perfect Siegfried — the problem here is Eva Marton's Brünnhilde. Her rich voice is immense, but so is her vibrato/wobble; she seems to expend most of her energy in simply controlling her pitch and belting out the notes. By the end of Act III, I was much less aware of her success at accurate vocal production than of the effort she had to make to do so — and I'd rather be aware of neither. Her Brünnhilde seemed more an exhausting exercise in vocal gymnastics than a living, breathing dramatic character who just happens to be speaking through an opera singer. Needless to say, Martón had little energy left over for characterization. Still, there were moments: a tender "Ewig war ich," and an almost pathetically vulnerable "Ich bin ohne Schutz und Schirm." I don't want to oversate my criticisms: after all, Brünnhilde sings for less than 30 of this Siegfried's 230 minutes. Still, Martón remains the only flaw in my otherwise rhabd anticipation of the Fall release of Haitink's Götterdämmerung.

Helping conductor, singers, and orchestra alike is a wonderfully supportive recording style. At no point did I not believe that I was hearing a simply, accurately miked re-creation of a mature, seasoned orchestra and singers in a warm, uncavernous, perfectly sized venue— Munich's Herkulessaal, the BRSO's home. This is all exactly opposite of the Levine Ring's sonic frigidity. Once again, the marvelous clarity and spaciousness that characterized the Haitink/EMI Rheingold and Walküre are fully in evidence; as I said in my review of the former, the music seems to rise like a golden mist through the orchestra rather than from it. Still, the orchestra retains its integrity: there is little or no spot-miking; things don't jump out at you, yet there is as much detailed "soundstaging" as you'd ever want. An utterly believable recording, in terms of both musicality and accuracy—except for a horrendous edit at the climax of Act I, just before Siegfried sings "So schneidet Siegfrieds Schwert!" It's the only glitch in an otherwise stellar sonic production, one whose sheer sound alone made me feel warm and good for four straight hours.

Now, Mr. Haitink—to Götterdämmerung, and glory!

—Richard Lehnert

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VLADIMIR HOROWITZ: Horowitz the Poet
Schubert: Sonata in B-flat, D.960; Schumann: Scenes from Childhood
Vladimir Horowitz, piano
DG 435 025-2 (CD only); Paul Goodman, Ewald Fais, engs.; Thomas Frost, prod. DDD. TT: 56:05

VLADIMIR HOROWITZ: Horowitz in Vienna
Mozart: Rondo in D, K.485; Sonata in B-flat, K.333; Schubert: Impromtu in G-flat, D.899 No.3; Moment Musical No.3; Schubert-Liszt: Souîtes de Vienna No.6; Schumann: Scenes from Childhood; Chopin: Mazurka in b, Op.33 No.4; Polonaise No.6 in A-flat, Op.53; Liszt: Consolation No.3; Moszkowski: Etincelles
DG 072 221-1 (1 laserdisc). Ewald Fais, audio eng.; Thomas Frost, audio prod.; Franz Kabelka, prod.; Brian Large, dir. DDD. TT: 90:00

The Schubert B-flat Sonata, recorded complete in the studio during several sessions early in 1986, had been one of Horowitz's unreleased projects before he moved on to other works and other recording interests. The work had figured in his 25th Anniversary program at Carnegie Hall in 1953, the earlier performance subsequently released by RCA Victor; the standard judgmental reaction at that time was that the pianist was far too individualistic and insufficiently classical in outlook, especially when compared with that Schubertian paragon, Schnabel. Quite recently, on the radio, I came into the B-flat Sonata somewhere in the second movement without having heard any opening announcement as to the identity of the performer. The interpretation was fascinating, full of personality yet stylistically reasonable, and of course it turned out to be the older Horowitz recording, now made available on RCA 60451-2.

I've always found the pianist a great wonder, even in those moments when, interpretively, there has been less to admire. To some extent this remains true of the new version of the Schubert, especially in the final two movements which are more miniaturized in form. Where the performance of the Sonata really fails, however, is in the overall lack of continuity, everything seemingly sacrificed to the effect of the moment. I find, even with repeated hearings, that the details of dynamics, accents, voicings, and ritards—all idiosyncratically exaggerated—are far more representative of Horowitz than of Schubert.

In the case of the discmate, Schumann's Scenes from Childhood, which derives from a 1987 tele-
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cast concert in Vienna (see below), this is Horowitz's third recording, the first two studio performances having been made respectively for RCA in 1950 and Columbia in 1962. Yes, there are exaggerations (the forzando accents in "Catch me if you can," for instance), but the interpretation as a whole has such poetic sensibility and eloquence that I would not hesitate in naming this his greatest version. "Knight of the hobbyhorse," a frenetic steeplechase in his first recording, here emerges slower and appropriately childlike. For that matter, the simplicity and naturalness of the final two sections, "Child falling asleep" and "The poet speaks," are really touching, and perhaps among the most magnificent examples of Horowitz the artist. The satisfactory piano sound is typical of the pianist's studio and live recording sites, but the idea of including applause at the end of the Schumann is an abomination in the context of the album title and the shattered mood of those concluding sections.

Interestingly, a few unimportant errors occur in the Schumann (Nos.3, 4, & 11), including some minor memory slips, some of which have been corrected on the CD but not on the laser-disc. The complete hour-and-a-half Vienna concert, however, is so very good in all ways that one might consider it the best of Horowitz's video endeavors, artistically and aesthetically superior to the London, Moscow, Last Romantic, and Mozart programs. (By the way, when Sony release the pianist's 1968 Carnegie program, "Horowitz on Television"?) Though the pianist's fingers in 1987 were no longer up to the velocity heard in his older recordings of, for example, the Chopin "Heroic" Polonaise or Moszkowski's Étinettes, there simply are so many gorgeous moments here—among them the slow movement of Mozart's K.333, the Schubert Impromptu, the aforementioned Schumann, the Chopin Mazurka—that one listens with awe.

What about watching? Would non-musicians enjoy what might conceivably be described visually as being musically equivalent to TV bowling or golf? Camera angles are kept simple, most of the shots concentrating with a minimum of fanciness on Horowitz's hands. It's the movement of those extraordinary hands, as well as some entertaining facial expressions before and after any individual performance, that will be the main visual attraction for the Horowitz fan. Technically, the disc is visually very good, the audio portion exposing the usual closeup piano miking of the performer's brilliantly voiced instrument. In spite of the printed indication that it has been encoded, CX noise reduction has not been used on either of the two LD sides. Adding it in playback results in an unpleasant compression effect. —Igor Kipnis

**DMITRI HVOROSTOVSKY: Russian Romances**

*Song by Rachmaninoff and Tchaikovsky*

Dmitri Hvorostovsky, baritone; Oleg Boshniakovich, piano

Philips 432 119-2 (CD only). Anna Barry, prod. DDD. TT: 51:54

Philips, in a wildly misdirected attempt at hip marketing, submitted this release for review in a plain white paper slipcase with a red sticker on which the words "This Siberian is too hot to cool down!" were printed. Call me simple, but this is a doozy statement. Is he "hot" despite the fact that he's Siberian? What kind of "hot" do they mean? Why should we want him to cool down? Does he want to cool down?

Hvorostovsky is the real thing—a warm, lyric baritone with range, flexibility, and brains. But you'll get more of each of these characteristics if you buy his first recital disc, comprising arias by Tchaikovsky and Verdi (Philips 426 740-2). The songs recorded here are typical of a certain type of sadness and introspection Russian composers are prone to, and I found the sameness dulling despite each song's individual beauty. In addition, in order to vary the overall effect, Hvorostovsky oversings many songs, putting pressure on his beautiful voice and causing worry.

Oleg Boshniakovich, the accompanist, is wonderful, but we aren't allowed to know anything about him or the baritone; Philips's notes discuss the music only. How pure. How shoddy. The sound is true, the recording roomy. Stick to the aria disc unless you're addicted to this special flavor of Russian Weltschmerz or must have everything this nice kid has recorded.

—Robert Levine

**SHOW MUSIC**

**BARNUM: London Cast**

Michael Reed, cond. Music by Cy Coleman; lyrics by Michael Stewart; book by Mark Bramble

Image 107887VP (laserdisc). Barrie Hawes, eng.; Harold Fielding, prod. AAA? TT: ca 110:00

Why, you may wonder, would a US laserdisc company just now release the 1986 BBC taping of the West End production of Barnum, a musical that was a hit, but definitely of less than gargantuan proportions? The answer is probably that they want to cash in on the popularity of Michael Crawford, now acclaimed as the creator of the title role in the enormously successful Phantom of the Opera. The motives may be crassly commercial, but the result is a most welcome addition to the small number of available laserdiscs of staged (as opposed to filmed) musicals.

Barnum is unlikely to make it to any listing of the Ten Greatest Musicals of All Time, but it's a solidly crafted work, and has one of Cy Coleman's better scores, including at least one
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attractive ballad ("The Colors of My Life") and, in "Come Follow the Band," the most rousing number of its type since Professor Harold Hill (a rather Barnumesque character himself) regaled us with his story about the time 76 trombones led the big parade. Michael Crawford gives a truly star performance as P.T. Barnum, meeting the role's physical challenges (he has to walk on stilts, leap from a trampoline, tightrope-walk, etc.), and being so gosh-darn likeable that we really don't mind it when he calls us suckers (the kind born every minute). He also sings pretty well, although not in a way that would make one think he'd be an ideal Phantom.

The rest of the cast is never less than competent (British musical theater performers are generally much more adept at playing Americans than North Americans are at playing Brits), and features a Jenny Lind (Christina Collier) who actually sounds as if she could sing opera (the Broadway cast's Jenny Lind is not very convincing as the toast of the opera/concert world). Directed for television by Terry Hughes (Sweeney Todd, Emmy Awards for The Golden Girls) in a straightforward you-are-at-the-theater style, the video production captures much of the excitement of live theater, only the lip-syncing of some of the numbers detracting from the sense of involvement. If this were a video magazine (it isn't, so don't start writing those anti-video letters again!), I'd also have to note that the video quality is disappointing, with resolution closer to VHS tape than laserdisc, and some peculiar blurring in scenes involving fast movement—a possible byproduct of video noise reduction. Fortunately for our concerns (once again, this is Stereophile, not Videophile), sound quality is very good, quite comparable to the Broadway cast LP (I don't have the CD), and far better than one would get on VHS-HiFi.

—Robert Deutsch

JAZZ

ARILD ANDERSEN: Sàgn
Kirsten Braten Berg, vocals; Arild Andersen, bass; Bendik Hofsteth, tenor & soprano sax; Frode Almas, guitar; Bugge Wesseltoft, keyboards; Nana Vasconcelos, percussion, vocals
ECM 1435 (849 647-2, CD only). Arild Andersen, prod.; Jan Erik Kongshaug, eng. DDD. TT: 67:27

NORDISK SANG (Music of Norway)
Kirsten Braten Berg, Pernille Anker, vocals; Hans Brimi, fiddle; Torleiv Bolstad, hardingfele (Hardanger fiddle); Eivind Groven, seljefloyte (willow-bark flute); others
New Albion NA 031 (CD only). Hans Wendl, Foster Reed, prods. AAD. TT: 49:30

Nordisk Sang is a uniquely dark, gentle, austere, strikingly powerful disc of distant intimacy, cold warmth, and other oxymorons of the borders linking opposites. It has been a special enough recording for me for the past six months that I've put off reviewing it until now.

The disc is a study in Northernness: endless cold, endless winter dark, endless summer light, the blue and purple blades of sharp winter sunsets whose fires throw no heat, the level gaze of a people who talk little, whose music is all thew and sinew and the bone-smooth beauty of solitude.

I moved to the High Desert of New Mexico for the similar (if warmer) sparseness of the Southwest. I hear in this astonishing music a similar stripped-bareness, here of sun-lashed rock, twisted and dessicated wood, and water scarce enough to be always valued—not so different from the western coast and central valleys of Norway, where this music was born. In the mid-May heat of the Potrero badlands where I live, Nordisk Sang soothed and braced with chill comfort.

The album is a sampling of recordings made between 1977 and 1988 (except for the first and last tracks, taped in 1957) for the Norwegian folk label Heilo. There are fiddle, flute, and vocal solos, duets, and strange tonal blends: voice, soprano sax, and Hardingfele; voice, Hardingfele, bouzouki, and recorder; willow-bark flute and pipe organ; and a synthesizer or two. Most striking are the vocals of Pernille Anker—a brooding, gently floating yodel that sounds like the crooning lullaby of a choir-girl turned mass murderer walking into the sea to her death. It sends chills up my spine, and I can't get enough of it. There is resigned peace here, mystery that denies resolution, and loneliness beyond hope.

That apartness informs the music on all levels: As often as not, even in the duets and trios, the playing is traded off—the musicians seldom play together, but alternate in lonely, dual soliloquies, separate even when together. The sound, from so many different sources, is variable, but minimally so. The sessions are cleanly, simply engineered, perhaps too closely miked, and with the usual HF emphasis, but all in all the sound is satisfying and unfatiguing.

Arild Andersen's Sàgn, a folk-jazz suite based on the same source material from which Nordisk Sang is drawn, is far more contemporary in almost every way. Here, in ECM's usual deep-focus, fully rounded sound, is a sextet of one Brazilian and five Norwegians, including folksinger Kirsten Braten Berg from Nordisk Sang. The musical language is introspective, meditative Northern post-jazz in the traditions of fellow Norwegians Jan Garbarek and Bobo Stensen, short on humor, long on profundity, and broad in its influences and cross-fertilizations: jazz played and recorded as if it is High Teutonic Art. In this case, it is just that.

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The 16 song-length tunes are gathered into three suites that segue as often as not, and the playing is invariably full, rich, confident, and anything but self-indulgent. The source material, of course, remains as remote and mysterious to me as the music of India, but speaks no less intimately for all that.

Two unique discs, two quiet takes on Northerness and its quiet fire, two冷冷ly glowing recommendations for music that demands as much stillness from its listeners as from its players.

—Richard Lehnert

FRED HERSCH: Forward Motion
Fred Hersch, piano; Rich Perry, tenor sax; Erik Friedlander, cello; Scott Colley, bass; Tom Rainey, drums
Chesky Records JD55 (CD only). Bob Katz, eng.; David Chesky, Fred Hersch, prod. DDD. TT: 73:47

KENNY RANKIN: Because of You
Kenny Rankin, vocals, guitar, piano; George Young, tenor & soprano sax, flute; Danilo Perez, piano; David Finck, bass; Dave Ratajczak, drums; Steve Kroon, percussion
Chesky Records JD63 (CD only). Bob Katz, eng.; David Chesky, Kenny Rankin, prod. DDD. TT: 46:27

PAQUITO D’RIVERA: Havana Cafe
Paquito D’Rivera, clarinet, alto & soprano sax; Fareed Haque, guitar; Ed Cherry, guitar; Danilo Perez, piano; David Finck, bass; Jorge Rossy, drums; Sammy Figueroa, percussion
Chesky Records JD60 (CD only). Bob Katz, eng.; David Chesky, Paquito D’Rivera, prod. DDD. TT: 58:40

In his notes to Because of You, singer Kenny Rankin pays this tribute to Chesky recording techniques: “I have been ‘making’ records for many years... But, until I met up with David and Norman Chesky’s innovative recording techniques I’d never had my ‘aural’ photograph taken.” The techniques are simple enough—Chesky discs are recorded “using minimal mixing techniques and without overdubbing or artificial enhancement.”

The results justify the singer’s praise. The clarity and detail, the unaffected rightness of the recorded sound on the bass and vocal duet of “Round Midnight,” the gracefully percussive “Berimbau” by Rankin’s full band—all fit the singer’s gentle approach to his art. Rankin has a soft, lyrical voice, perfect pitch, and a delightfully buoyant rhythmic approach to singing. He’s charming rather than dramatic, and, in his own writing, witty. The light lyricism of his sound is supported here by a small group that shares the leader’s buoyant professionalism: George Young on reeds, Danilo Perez on piano, David Finck on bass, and on drums and percussion, Dave Ratajczak and Steve Kroon. There’s nothing moody or melodramatic about Rankin; even on his “What Am I Gonna Do Without You” he sounds wistful rather than seriously aggrieved, and he seems barely depressed by the sorrows of “Round Midnight.” Rankin’s more in tune with the optimism of Rodgers and Hart’s “I Could Write a Book” or Gershwin’s “Someone to Watch Over Me.”

He’s chosen a wonderful repertoire for this disc: although his own lyrics sound prosy compared to Irving Berlin’s “Always,” his delivery of his “Haven’t We Met” and “This Old Man” makes both seem natural and sincere.

The last piece on pianist Fred Hersch’s Forward Motion is “Nostalgia.” A raucous, self-parodying tribute to stride piano, it is ironically the least nostalgic number on this disc, which begins rhapsodically with a cymbal splash by drummer Tom Rainey, and a statement of a broad Hersch melody by cellist Erik Friedlander. This turns out to be an introduction to the more sprightly “Heartsong.” Fred Hersch is an accomplished pianist whom I have heard performing with saxophonists Joe Henderson, Jane Ira Bloom, and around Boston with his own trio. I never knew he had the sentiment of a streak that I hear in his compositions “Tango Bittersweet,” “Child’s Song,” and “Lullabye” on this disc. I greatly prefer such harder-hitting performances as “Phantom of the Bopa” or the piquant stop-start melody he wrote in tribute to Jane Ira Bloom—“Janeology.” In its initial chorus, we hear a unison statement of the theme by saxophonist Rich Perry, Hersch, and drummer Rainey. In the spare collective improvisation that follows, each player offers short phrases; tidbits of conversations that are both brilliantly executed and mirthful. The clarity of the recording is essential to this effect—all muddying or uncomfortable resonance would have hampered the group, and made “Janeology” sound like less than the scintillating conversation it is.

Alto saxophonist Paquito D’Rivera’s first American recording was with the group that made him famous: the Cuban jazz band Irakere. He’s hot, a kind of Latino Phil Woods, and Havana Cafe is one of his best discs. The recorded sound is somewhat different—more resonant and less distinct—than on the other Chesky discs under review. It’s as if we’ve stepped back a bit from the band, which we’re hearing in a concert hall. That effect should bother few listeners, except perhaps during the two solos by an added electric guitarist, Ed Cherry, who appears only on “Jean Pauline”.
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and "Who’s Smoking." His sound is unfocused—he seems to have the band surrounded. Besides the hard-hitting Latin jazz of the title number and of pieces such as "The Search" and "What Are You Doing Tomorrow Night," this disc has the gentle "Bossa do Brooklyn," with Fareed Haque on acoustic guitar and D’Rivera on clarinet, which he also plays in the Bach-like "Contradanza." The percussionist on this disc is the brilliant Sammy Figueroa, who joins drummer Jorge Rossy and bassist David Finck in a rhythm section that includes a powerful young musician new to me, pianist Danilo Perez. A rhythm section this active and precise deserves the kind of engineering Chesky has delivered.

—Michael Ullman

THE USUAL SUSPECTS

The press kit for this release came in a manila file folder boldly stamped in stenciled red: THE USUAL SUSPECTS. Cute. I pulled out the flack sheet and began to read. It seems Grammy-winning record producer and cable designer Jeff Weber gets his chance to do an album for Sheffield Lab, the company which, 15 years ago, was instrumental in shaping Weber’s musical career. [See Robert Harley’s interview with Weber elsewhere in this issue.—Ed.] He hand-picked a distinguished group of session musicians, turned them loose in Bill Schnee’s studio in North Hollywood, and rolled tape.

It’s obvious that a lot of thought and energy went into the production of The Usual Suspects. I’ve attended recording sessions, and they’re hard work. I just wish I could be more positive about these results. With the exception of two vocals, it just doesn’t work.

The lead-off song, “Are You Scary?,” a throwaway dub in search of a tune, serves little purpose other than showing the world what an excellent engineer Al Schmidt is. However, the track does continue the tradition of sound recording that made Sheffield Lab famous. It’s great hi-fi showroom fodder, but it’s not music. Even Eric Gale’s guitar can’t save this one. If this is supposed to be “funk,” what do you call the music of James Brown?

“Time Will Bring You Love” is more like it, and one of the reasons to give this disc a spin. Bill Champlin, leader of the Sons of Champlin during the late ’60s and now with Chicago, is one talented guy. He wrote and arranged this tune and sings a compelling lead vocal. His is a great voice, full of emotion and energy. This cut is a keeper!

But the next one, “Don’t Give Up the Groove” is an absolute waste. Clydene Jackson Edwards provides the only other reason to listen to this album with a song she co-wrote (with Jack Grooms), “(My Heart Says) Come On In.” She also assisted in the arrangement, and possesses a voice I’d like to hear more of in a different context. This tune, like Bill Champlin’s, is heart felt and worth hearing. “Things Change” isn’t. This track sounds a lot like “Don’t Give Up the Groove.” What is this music? It’s not fusion (not enough energy), jazz (not enough creativity), or pop (not enough hooks). I give up, Doug. Please write and tell us what this music is called.

The quasi-gospel sound of “Life Is What You Make It” is pleasant enough . . . but why go on? All the ingredients for a gourmet feast were present at this session, but the recipes were bad. This disc only reinforces Holt’s Law: The better the recording, the worse the performance. Sheffield, you’ve done much better.—Guy Lemcoe

Rock

JOHN LEE HOOKER: Mr. Lucky
Charisma/Pointblank 91724-2 (CD only). Roy Rogers, prod. (except as noted); Mike Kappus, eng. SAD. TT: 47:23

BUDDY GUY: Damn Right I’ve Got the Blues

The father begets the son. And when the years have passed and the father has finished teaching the son the ways of this world, the father lays down his burden and the son becomes his caretaker. Thus have my people prospered lo these many years, for it is the Natural Way of Things. It is this way, too, with the blues. From the apprenticeships the great leaders like Muddy and Wolf offered such “sons” as Little Walter and Hubert Sumlin, the blues has kept itself alive by adopting this familial system of father-son progression. And when it appeared that the British blues-rock invasion had steamrollered the blues into an early grave, their pale, fish’n’chips-eatin’ progeny brought Muddy and Wolf over to Merry Ol’ and paid back millions of dollars in stolen riffs and conceptual stances with a couple of “father & sons” albums for London in the ’70s.

But there’s a mighty fine line between helping your heroes out and relegating them to mere figurehead status, and that’s what’s so wrong with John Lee Hooker’s Mr. Lucky; instead of giving Hooker the support he needed for a superlative album of John Lee Hooker music, the long list of guest artists take over the songs on Mr. Lucky to such an extent that the only thing left of John Lee is a near self-parody of his stark, moaning vocals. Producer Roy Rogers (the 40-something white slide guitarist who leads Hooker’s touring band, not the guy who

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stuffed and mounted Trigger) takes over the sound here just as selfishly as he does during Hooker's live shows, turning the proceedings into The Roy Rogers Blues Experience "featuring John Lee Hooker on vocals." Honestly, poor John Lee sounds totally lost on the up tempo happy-time shuffle "I Want To Hug You," a piss-poor bar-band blooze Hooker audibly strains to keep up with. The generic shuffle "Mr. Lucky," a pointless, rambling duet with the Robert Cray band, fares no better; lacking any interesting playing, singing, or interplay between the performers, you're left wondering just what it is that's supposed to be dug here. Certainly not John Lee Hooker, who sounds about as comfortable in this straight I-IV-V shuffle as the Brothers Gibb. Ditto his outings with Texans Albert Collins and Johnny Winter, which both feature extended guitar solos from the guest at hand and virtually no clue to the listener that these are actually John Lee Hooker tracks.

By far the two strangest cuts on this set are Hooker's duets with Santana and Van Morrison. The former, a supremely wimped-out two-chord fusion vamp even Flim & the BB's would sneer at, simply lays Hooker's seemingly off-the-cuff mumblings about some no-good wimps that stripped him naked, etc., over the kind of L.A. slickatear glossed-out NOTH-ING found more often on GRP "jazz-funk" demo CDs given away with mid-fi CD players. The latter, "I Cover the Waterfront," is another (sorry, Richard) lame-ass open-tuned patented Van The Man faux-gospel Tension'n Resolution (Van had 'em tattooed on his left- and right-hand knuckles) road2nowhere soul sermonette that finds our heroes slip-slidin' ever so deeply down about that "bay-yay-yaybee, lawd" who's comin' down that long, lonely dock while they're watchin' them ships leave the harbor and . . . [slump] . . . ZZZZZZZZZZZZZZZ.

To be fair, there are a few okay moments on Mr. Lucky, most notably the remake of Hooker's classic track "This Is Hip," where John Lee actually gets to play some guitar!, backed by Ry Cooder (guitar), Jim Keltner (drums), Nick Lowe (bass), Johnnie Johnson (piano), and the great vocal trio of Bobby King, Terry Evans, and Willie Greene. The remake of "Crawlin' Kingsnake," with Keith Richards, cooks mildly, too. But even these two fair cuts aren't enough to fully salvage Mr. Lucky, an album that's got little or nothing to do with the artist on the jacket. Given how much I worship John Lee Hooker, this album depressed me beyond belief.

Fortunately, not all blues comeback albums suffer the same musical mutiny as Mr. Lucky; Buddy Guy's Damn Right I've Got the Blues KICKS ASS, and does it in every dimension the Hooker disc falls flat in. Longtime guitar hero Guy has been in self-imposed recorded limbo since 1981's uneven Stone Crazy on Alligator, and even then he hadn't matched his incredible live shows on record since '68's incendiary live Vanguard album This Is Buddy Guy! Here, Buddy gets help from disciples Clapton, Beck, Knopfler, et al, but the operative word here is help; producer/guitarist Porter and his heavy weight guests have the sense and taste to let this be Buddy's show, and the result is some of the most exciting modern blues I've heard in a long, long time. All the way from the tough urban blues of the title track to the killer cover of John Hiatt's "Where is the Next One Coming From," Buddy reaches deep down and lets ten long years of accumulated frustration scream out in one sustained blast of feral howl the likes of which I haven't heard since Stevie Ray Vaughn's first (and best) album, Texas Flood, which was a blatant Buddy Guy homage the other half of the time it wasn't a blatant Albert King homage. Buddy's often fretted in print that he just couldn't let loose in the studio the way he does onstage, but I'm here to tell you, he does it here.

Why does Damn Right I've Got the Blues work so well while Mr. Lucky bites weenie? Because on Buddy's record, Buddy gets to be Buddy! He sings and plays the same West Side urban blues he co-founded with fellow Cobra labelmates 2 The fall 1991 issue of Spectrum magazine, Schwann's popular music listing, features an unusually perceptive and fascinating cover story on John Lee Hooker by a writer whose name escapes me at the moment, as well as including a discography of his best records, all of which are currently available on reissues, and all of which make Mr. Lucky sound like the dis-embodied, directionless product it is.

3 Part of the problem has been Buddy's perception, right or wrong, of what his fans wanted from a Buddy Guy record. Four years ago, I was playing on the same bill as Buddy during a week-long anniversary celebration at the legendary Austin blues club Anones, and witnessed one of the most disturbing scenes of my musical memory: an hours-long argument between Buddy and club owner Antones Records label head Clifford Antone on this very subject. Now, whereas in the early days, you had the chubby white Cigar Stub Guy dictating to the pure, unadulterated bluesman what otherworldly sounds to emulate much against the bluesman's natural bent, this was actually a 180° reversal. While Antones was offering Buddy a chance to record a totally pure, straight-ahead blues album the likes of which he hadn't had the chance to do in over a decade, Buddy instead wanted to do an album of Hendrix-style heavy rock with wah-wahs, fuzztones, and all the other tricks "the kids like!" No amount of pleading by Clifford could convince Buddy that his fans really wanted him to just do what he did best. As it happens, Damn Right I've Got The Blues is probably the album Clifford and Buddy would've made together four years ago.

4 The final track is, fittingly, a searing Buddy homage to the late great Austin guitarist: "Rememberin' Stevie." Ironically, Buddy imitates Stevie imitating Buddy! Somewhere, an angel in a black bolero hat is laughing his ass off.

5 My litmus test for blues albums is how quickly I run and crank the Bassman up so I can jam along with the music; Damn Right I've Got The Blues had me strapping on the Stratocaster ten seconds into the first track. This is a seriously great guitar album!
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Otis Rush and Magic Sam; he’s not merely dropping in his vocals on top of a Los Lobos track, or singing a duet of “Witchcraft” with Harry Connick Jr. With Mr. Lucky, you get the feeling that John Lee wasn’t even in the same city while the backing tracks were being cut, such is the enharmonic vibe of the whole album. It would be understandable if Hooker wasn’t up to the task anymore; after all, he is quite old. But on the tracks where he reprises his old classics, he shows that, given a little room to breathe, he’s more than capable of singing and playing the same hypnotic brand of blues that made him a legend in the ’50s and ’60s. If the man can still start a fire, WHY NOT LET HIM?! Why limit him to sprinkling the odd croak over fully produced tracks by other bands?

D*mn Righ† I’ve Got the Blues is the best modern blues recording in years, one no fan of the genre should be without; ignore Mr. Lucky with the force of ten hurricanes.—Corey Greenberg

ICE-T: O.G.: Original Gangster
Sire/WARNER BROS. 26492-2 (CD only). Various engineers;
Ice-T, prod. AAD. TT: 72:00

Don’t play this disc expecting to hear the lucid, rock-inflected anarchy that drew me, along with what must have been a considerable crossover audience, to 1989’s Iceberg album. But O.G. isn’t your typical rap record, either. You might think so at first, because you get from the outset a fair portion of the genre’s predictable ego-inflations and stock inflammatory images: microphone as weapon, microphone as phallus. The disc opens with a self-skewering monologue by a supercilious and evidently white female character as she is won over to Ice’s irresistible, studley gangsterism. There’s also the required allotment of MFs and such to earn the Tipper Sticker that adorns the jewel-box cover. All this stuff’s just Whitey-Baiting 101. If you have a hard time with it, buy elsewhere; here it’s the currency, and you’re shopping at the wrong store.

But the whitey-baitings are really pretty mild and scarce. Ice’s other assorted japes sound rather—dutiful. And the DJ tricks that accompany the words are less weird and less interesting than past efforts. This Year’s Model has its heart in a fundamentalist rap of a particularly violent, businesslike variety.

The business is, of course, to describe urban life through the words of a black man who used to live as a gangster. This particular man has become almost Calvinist in his focus, spinning his tales like morality plays—only here the bad guys are not witches and antinomianists, but the drug people (only a symptom) and the cops with the guns (the real problem). And remember, Calvinism is theological justification for capitalism, and the latter is precisely the right system to describe the world Ice-T reports: the just-business homicide of the drug dealer is most rigorously capitalist; his opposite number, the wealthy rap star, conspicuously displaying the tokens of his success as an example of why noses should be kept to the grindstone and mouths away from the crack-pipe, is certainly a capitalist, too.

Aside from a few scattered remarks about “Hoes,” there’s not even much sex-rap cocksmanship, as one of Ice’s monologues takes great pains to point out. And while “Bitches 2,” his evasive apology to the ladies for past offenses, will convince few that he wasn’t really trashing them in past recordings, there’s nothing here approaching the level of Luther Campbell/2 Live Crew—style gooony. This guy’s serious. Consistent with the focus on business, there’s a renewed concentration on communicating the words: the rhymes are plainer; I could decipher most everything on first listen, and I pretend no particularly poetic ear, or access to the lingo.

The rock n’roll on this record is largely to be found on a single track called “Body Count,” which is also the name of the Ice-T-fronted rock band that plays it. Neo-’70s Metal guitars abound, dripping with the affinities between black music and Metal shown to us over the years by George Clinton, Run/DMC, and Aerosmith. (And Hendrix. And don’t forget Miles Davis—I had, until I read that he died yesterday.)

Speaking of rock n’roll—when last I wrote of Ice-T, I mentioned that he reminded me of Frank Zappa. Then it was because of the common theme of concentration-camp apocalypse and their Tipper-bashing. (At the time I should also have mentioned their misogynry. Silly me.) Seems to me that Zappa has one helluva Calvinist streak—I wonder if the man has a sensu-alist bone in his body.

Calvinism still has a useful side, at least when employed in moderation, and that’s its work ethic. When this rapper uses his resources to exhort the young people in South Central L.A. and anywhere else to learn and think and get outta the ghetto and help themselves, it’s hard to argue, especially when you’ve sure as hell got no better suggestion. Has New Jack Star-dom spoiled Ice-T? Many suspected this after his rock n’roll crossover, as did I at first while wondering where the dising of white folks went on this record. For all his protests about not getting radio play, Ice is, after all, a card-carrying member of the Popular Culture Industry, and has reason to pause before offending a large portion of the record buyers who make him rich. But that’s not a good enough explanation. O.G.’s music is not primarily formulated for white folks to groove on; and the reason that white folks aren’t much featured or
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even caricatured here is that they’re pretty much absent from the world it describes.

And if Ice’s cold-eyed observations have caused him to become more grim and focused, then maybe he’s got a point. —Kevin Conklin

**RAIN TREE CROW**

Virgin CDV 2659 (CD only). Pat McCarthy, eng.; Rain Tree Crow, prods. ?DD. TT: 45:59

**LONELY UNIVERSE**

CMP Records CMP CD 41 (CD only). Walter Quintus, eng.; Kurt Renker, Walter Quintus, David Torn, prods. DDD. TT: 38:58

Rain Tree Crow is ostensibly a solo project by David Sylvain, former lead singer of the group Japan. Matters are confused, however, by the fact that the other members of RTC are also former members of Japan. Whether for legal or other reasons, this appears to be a Japan reunion album under a new name.

If this news provokes a big “So what?” it may be because Japan was never very well known Stateside. Often dismissed as Roxy Music clones, they lacked Roxy’s hit singles and so never broke big over here. Nevertheless, they were quite successful in England and Europe and were mega-superstars in—you guessed it—Japan. Truth be told, they rivaled and occasionally surpassed Roxy Music in talent and creativity, lacking only Roxy’s ironic humor. Japan was an Art band with a capital “A.”

After the parting of the ways, singer Sylvain went on to make solo records of varying interest, sounding more like Leonard Cohen than Brian Ferry. Mick Karn made solo recordings featuring his wonderfully unique fretless bass stylings as well as the usual and unusual “world music” influences. Keyboardist Richard Barbieri and drummer Steve Jansen did several records as the Dolphin Brothers.

Rain Tree Crow actually sounds like neither a Sylvain solo record nor a Japan reunion but rather like a Steven Jansen project. The songs (if you can call them that) are built around his drums and exotic percussion parts. These are wonderfully recorded and unfettered by the dated “big” drum sound used ad nauseam on most pop records. (I admit to being a fan of Phil Collins’s compressed/gated room sound when it first appeared on Peter Gabriel’s record. Back then it was new and exciting, but enough is enough.)

Jansen’s drum kit sounds naturally recorded in a great-sounding room. The drums are punctuated by more processed guitar and synthesizer sounds, but once again these are not the same four sounds that homogenize most pop records. Jansen’s grooves are simple, hypnotic, exotic, and mysterious without being self-consciously so.

Sylvain’s voice comes and goes, moutning cryptic, near-pretentious (sometimes more than near-) lyrics about life and love, making him sound less like Leonard Cohen and more like Johnny Mathis for the nose-ring set.

But don’t misunderstand—I love this record. The music perfectly presents the dark desert landscape pictured on the CD cover. Space abounds—songs actually stop dead only to begin seconds later (a radio programmer’s nightmare). Pure sound for sound’s sake is celebrated. For all their disjointedness, the tunes work. Though improvised in the studio, they sound crafted, albeit studio-crafted.

Unfortunately the same cannot be said of another project featuring Mick Karn. Lonely Universe is a one-off aggregation put together by Canadians Michael White (trumpet) and Michael Lambert (percussion). White replaced Mark Isham on guitarist David Torn’s “Clouds About Mercury” tour (Torn is the fourth member here), and Lonely Universe sounds like a looser, edgier Isham record. Looser and edgier is the good news. Less focused is the bad news. The compositions sound less composed than like unedited jams—much like Michael Shrieve’s project with Torn and Andy Summers.

This could be forgiven if the record had the live feel of players reacting to each other. In fact, all the studio scenes show. Everyone plays well but each in his own universe—no wonder they’re lonely. Karn’s bass is more evident here than on RTC, but is overly compressed and lacks his usual warm tone. Torn’s sound is also colder than usual, and the two Michaels, while talented, do not seem to have found a musical niche of their own.

Worst of all, for music that’s about sound and ambience as much as anything, the instruments all sound excessively dry and up-front. This makes for a small universe indeed.

—Michael Ross

**SQUEEZE: Squeeze Play**

Reprise 26644-2 (CD only). Tony Berg, prod.; Bob Clearmountain, mix; various engs. DDD. TT: 52:32

Why do wonderful masters of technology like Bob Clearmountain and Peter Gabriel, via his Real World studio in Bath, UK, lend their considerable credibility to such naff vanity projects by old stagers who should have packed it in—and, sensibly on the part of at least half the band, did pack it in—years ago?

I suspect the chance to play with a state-of-the-art band on an all-digital production attracted Clearmountain. Gabriel is a supportive dude to fellow travelers (Squeeze has performed at various street-cred functions over the years), and what’s left of the reformation of Squeeze—the writing nucleus of Glenn Tilbrook (music) and Chris Difford (lyrics), plus drummer Gilson Lavis—would do anything to get their words into the public ear. Plus, born-to-run
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manager Miles Copeland (son of the late CIA agent and brother of Ian the booker and Stewart the drummer) is organizing things, Reprise is paying the bills, and I bet everyone’s expecting a pretty big payday.

Save your money. Go buy reissues of the real thing, when the guys had guts and blood and muscle and their first unhappy love affairs: Cool for Cats (1980), Argybargy (1981), even East Side Story (1982). When Squeeze was an entity—a complete band that danced on that delicate balance of great material and fine technique.

The original reason to show up was to hear, first— and briefly, mid-'80s—vocalist Jools Holland, one of the most entertaining utility keyboard players, singers, and all—'round front people a band could be privileged to sign on; and second, former Ace lead singer Paul Carrack. Holland’s singing made the title single from “Cool for Cats” a UK chart-topper, while Carrack was the voice behind the Ace soul-bender “How Long” and Squeeze’s “Tempted.” Sure, as performers Difford and Tilbrook are great writers and guitarists, but face it: with tracks like “Pulling Mussels from the Shell,” “Another Nail in My Heart,” and “Black Coffee in Bed” (from Sweeets from a Stranger, 1982, with Don Snow on vocals), the early years were the great years.

Squeeze as a band busted up in 1982 and re-formed, sort of, in the mid-'80s; I was lucky enough to catch a set in London with Jools Holland; he left, and the fire went out again.

Here’s the result of Reprise throwing around a lot of Matchlite: a CD with what a Creek/Rotel combination reveals as the downside of the “digital sound”—tense and squish (no pun intended). Second, rehearsal, recording, underdubs, and mix were taken at five separate locations, from Wales through Los Angeles. Clearmountain has done his best, but what’s happened is that each channel often sounds separate—clear, pristine, transparent, and accurate, sure, but discrete—and there’s no sense of blend. Worse, sometimes the lead vocals seem to fall behind the backing instrumentals, but the imaging is such that you don’t for one minute believe Difford is cruising around the soundstage, you just know a fader’s kicked in. Fourth, even with the magic of digital technology and headphones, sometimes the lyrics aren’t clear! Is the singer “eating” or “hating” the lines in the road ahead of him? (From “The Day I Get Home,” arguably the most appealing track on the album.) Does his “bed” or his “blood” run hot and cold (“The Truth”)? Honest to God, guys.

Squeeze has always been known for writing imaginative, economical, melodic, often rufeful tales of everyday domestic drama. This wet little concept album—a theatrical performance and also a pun, a Play, gedit?—on comings and goings and love and stuff is so limp it makes the Ray Davies of The Village Green Preservation Society look like the Ben Johnson of rock and roll. As it now stands, Difford and Tilbrook don’t have enough blood between them to write up a good knees-up for the cast of Eastenders.

In the end, Play is as boring as a made-for-TV movie. Like a fading sitcom, the cast list is peppered with guests. In addition to Bruce Hornsby on accordion, ha ha, “noises off” were contributed by Michael McKeen and Christopher Guest: a real unforced error, because it makes you realize just how very much you wish you were watching Spinal Tap.

And finally, the Squeeze conceit—spolboy word and concept plays on art—is as unbecoming in musicians of a certain age as rouge on Nancy Reagan. Here, the lyrics are buried in a liner-note playlet (by Tim Carr) which manages simultaneously to crush both Thornton Wilder and Samuel Beckett into a pastiche of such clever but ultimately meaningless display that the college demographic at whom this is probably aimed won’t even realize there’s something there they didn’t get. Boys approaching 40 should either take their Harold Pinter like a man (let’s see if they try to squish The Homecoming into The Importance of Being Earnest, if there is a next time), or just fly off to Peter, Tink, and Michael Palin.

—Beth Jacques

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CODA FET-01 Preamplifier

Editor:
We at Coda Technologies would like to thank Robert Deutsch and Stereophile for the most favorable review of our FET-01 preamplifier. It is high praise indeed to have an admitted “tubeophile” speak fondly of a solid-state design. While we believe that vacuum-tube colorations are more benign than the transistor “nasties,” both are to be avoided for a product to be “high fidelity” in the strictest sense of the word. This was our goal, and from the general tone of the review it would seem that we are approaching that ideal. Thanks again!

ROGER ARTMAN
Marketing & Sales, Coda Technologies

Nelson-Reed 8-04/CM Loudspeaker

Editor:
JGH’s comments about the midrange and high-end sound of the 8-04/CM are as good as one could wish. Yet, obviously, his conclusions about the bass performance are less than glowing. Considering Stereophile’s comments on bass abondanza in the model 8-04/B, one may think that the present comments make no sense at all.

Unfortunately they do.

As Gordon noted, the model 8-04/B has full, if not heavy, bass. Although the 8-04/B is still in production, the model 8-04/C was designed to improve the bass by increasing the cabinet volume. It did so.

As a further improvement, the model 8-04/C uses separate bass crossovers for each 8” woofer. This further enhances damping and improves bass quality by cutting the DC resistance to the woofers in half. This works. Casual listeners often can’t appreciate the improvements; audiophiles can.

All should be well and good. As Gordon surmised, the cabinet volume increase and the dual crossovers are actually rather modest “tweaks.” In terms of expected bass performance, the 8-04/CM, in Gordon’s words, “is ostensibly the same loudspeaker” as the 8-04/B. We could not agree more.

Curiously, during the latter days of 1991, we received comments from several 8-04/CM owners about bass weakness. Their comments fit fairly well with Gordon’s observation. Adding to a now growing mystery, other owners reported normal if not abundant bass. Our concerns grew with each conflicting comment.

Something was amiss.

To make a long and convoluted story short, the problem has been traced back to a disastrously out-of-spec batch of woofers. Our woofer manufacturer accidentally built our woofers with pole-pieces meant for another customer. While the physical size difference amounted to a “minute” 0.5% deviation, it was enough to radically reduce the woofer Q from 0.33 to 0.18, as well as reduce its efficiency by about 0.5dB.

We don’t measure woofer Q during incoming inspection because the Q of the box and the port together swamp out normal (± 5%) driver variation. But this is not a case of normal tolerance. A woofer of one-half normal Q is so mismatched with our tuned cabinet that bass performance is audibly degraded in subtle and unpredictable ways.

In spite of the grossly low-Q woofers, normal frequency-response and resonance tests made on the completed loudspeaker do not show significant deviation. The thorough impulse measurements that John Atkinson performed provide only subtle and inconclusive clues. However, an experienced listener familiar with his room and equipment can, in time, hear what is wrong. So much for those who believe that measurements tell all.

While one may question Gordon for flatly “disqualifying” a product based upon a single now–you–see–it, now–you–don’t weakness, we at Nelson-Reed can not. We fully support both Gordon’s and Stereophile’s respective review positions with regard to the actual loudspeaker samples reviewed. We know what Gordon’s long-term experience would have him expect of 8-04s in general. This is not a case
As the Genesis loudspeakers and subwoofers evolved, the designers based their conclusions upon decades of accomplishment interlaced with a visionary foresight to the innovation of speaker technology. Individually Genesis is two men, Arnie Nudell and Paul McGowan, both legends in audio new generation. The alliance of their creative talents has already established cutting edge products which simply overran the accepted boundaries of the designers' art. The success of the partnership is decisively evidenced by the rave reviews accorded the IM-8300 and optional Servo 12 subwoofer.

Omni Sound, Dallas' oldest audiophile oriented retailer, invites you to audition the Genesis in conjunction with the finest components available. You will be lost in amazement by the soul-stirring delineation and pacing of the bass register. The articulation of vocal range and the glory of massed strings will astound you. Regardless of your current system, the Genesis' superb rendition of music's power will establish a new reference in loudspeaker performance.

Posessed of an authority which transcends their size and flexibility the Genesis equals or exceeds the best of the competition at a fraction of their expense. Most surprisingly, ownership of this edge of the art performance is far less costly than some would have you pay for last year's digital processor.

Undoubtedly a designers' statement upon the evolution of audio technology, the Genesis is indeed proof of intelligent life in the universe.

Shown above IM-8300/Servo 12 Genesis Systems starting as low as $895. For more information and ordering please call 214-964-6664 Fax: 214-964-0113.
of a capricious dismissal based on personal taste, but an accurate subjective perception of a now well-defined, quantifiable problem.

Enough of the good news. Now for the bad news. This is not a simple case of only the reviewer having a bad pair. This shipment of low-Q woofers was used in more than 20 pairs of 8-04/CMs. The low-Q batch was mixed with a later batch of correct-Q woofers, resulting in some 8-04/CMs having between one and four of the out-of-spec woofers. Fortunately, since the woofers are individually serialized, we are now in the process of contacting those lucky owners to arrange repair or recall. This should just about wipe out the office coffee-fund for the year.

From now on, all driver subassembly parts will be visibly stamped with an N-R logo.

Naturally, we look forward to submitting a normal pair of 8-04/CMs for a "Follow-Up" review. W.B. Reed, R.L. Nelson Nelson-Reed

Kinergetics SW-800 Subwoofer System & KCD-55 Ultra D/A Converter

Editor:

Thanks to Jack English for his review of the Kinergetics Research SW-800 Subwoofer System and for his comments on the "Mini Statement" system. I especially want to commend Jack for taking the time to try numerous placement setups. As any audiophile knows, in many cases this is half the battle.

Although the bulk of Jack’s review concentrates on the "Mini Statement" system, I would first like to comment on his review of the Subwoofer System.

The SW-800 system was developed to enhance the performance of most speakers. With its -3dB point at 17Hz, it can reinforce the bass extension of all but a handful of today’s high-end speaker systems.

The "fascinating element" (Jack’s own words) of the SW-800’s design is its crossover. Although designed to allow the maximum flexibility of speaker placement and choice of associated components, the crossover was designed with performance in mind. The "transitory" coloration to which Jack refers was difficult for us to understand. All of the listening tests we did in-house and in the field never gave such an impression. However, in an all-tube system like Jack’s, we see where it is possible.

Kinergetics Research strongly agrees with Jack’s assessment of room requirements for the SW-800 system. This system was designed for large rooms where the towers can be placed away from side walls. If your room does not allow for this placement, we suggest the abbreviated version of the SW-800, the SW-100 with 800C crossover.

As for the "Mini Statement" system, we are proud of this sonic accomplishment. After all, being "faithful to the music" is what it is all about.

An $8500 "bargain." Thanks, Jack! Re. the KCD-55 Ultra D/A converter: RH took the time to inspect our baby, and liked it. We can only react as any proud parents would and say, "Thanks, Bob!"

The Platinum line of components which we have developed was made to be superior in sonic performance and craftsmanship. The comments "very solid build" and "expensive, elegant appearance" make our production team beam with pride. Other comments like "transient quickness," "three-dimensional quality," and "transparency," which are but a few of Bob’s superlatives, make us feel that our design goals were met.

Suffice it to say that we encourage (as does Mr. Harley) those looking for the best in digital audio to read this review carefully and listen to the Ultra. We believe that you, too, will be "pleasantly surprised" to find the Ultra a superb maker of music. Rafael A. Nevares Kinergetics Research

Rotel RCD-955AX & RCD-965BX CD Players

Editor:

I couldn’t believe it. As I put down the phone with Richard Lehnert of Stereophile, I sighed and thought to myself, “Corey Greenberg is reviewing the two CD players Rotel sent to Stereophile more than a year ago. Now I have to phone Corey and explain that while one of the units—the RCD-855/955—is very much the same, the other—the RCD 865/965—is very different.”

I could imagine the way the phone call would go: “Hi, Corey. I’m the new guy on the block for Rotel, and I’ve got some bad news for you.” Wonderful; this would be a great opening line. I’d rather take a long walk off a short pier, have a tax audit, or lunch with my ex’s mother.

I imagined I could hear the strains of ZZ Top’s Eliminator echoing around B-93 FM where Corey works as he hurls my CD players into the trash, while muttering descriptive prose like “noisy drive, audible clangs, not very rugged, response very very flat…”

In actual fact, Corey took the call quite well. He graciously omitted from his story the wail which he let out as I passed on the bad news. I explained that I am not new to Rotel and that I originally worked for the brand back in the days when JA was editor of Hi-Fi News & Record Review—in fact, even before JA was editor of HFN/RR.

JA may even remember the first time we
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went to Harrogate as Rotel UK and introduced our little RA-820 amplifier back in 1980. The press were skeptical that a company like Rotel could make a good amplifier, and even when we proved we could, they raised doubts whether we would be able to continue the trend.

Since then, Rotel has gone on to win award after award within all model groups, especially amplifiers and CD players. Every new model gets better. It's Rotel's product philosophy that a new model will be introduced only when it has something better to offer.

As Corey, Lew Lipnick, and Robert Harley have found, the RCD-855/955 is a very credible performer and better for more expensive combinations of processors and transports. Corey's findings further indicate the enduring value of this classic audio bargain.

Interestingly enough, across the pond, the reviewers strongly favor the RCD-965, and with more time Corey might have been better able to put the RCD-965 through its paces. You see, unlike the RCD-955/855, the RCD-965 is completely new inside and out. It's in a new case and has the very latest operating chip, which gives it a much cleaner, smoother, more expansive sound than the old RCD-865.

Mechanically, the RCD-965 is much faster in operation that the old model. There's almost a night-and-day difference in track-selection time, and the drawer now opens without hesitation.

Perhaps it's possible that Corey did not have time to burn-in the RCD-965. Rotel CD players are like amplifiers and need a good period of operation (minimum of one week, as LL emphasized in his review of the RCD-855) before being judged subjectively. Certainly you should go listen to the RCD-965. It has won all the major awards across Europe for "Best CD Player."

Audiophiles and music lovers alike on finite budgets who don't want to sell their blood should do as Corey says and listen to both Rotel players in a store. Better still, audition them in your own system — then decide.

For people who already have an RCD-855, the next best thing is not a budget processor, as Corey confirms, but probably a good set of interconnects. Be warned, however; the kind of Stereophile uses can cost more than the CD player.

Corey, thanks for getting this review together in such a short time; I promise our communication will be much better in the future.

Mike Bartlett
VP, General Manager, Rotel America

ROOMTUNES

Editor:
We would like to thank Guy Lemcoe and Stereophile for this artful, accurate, exciting review of our acoustical and isolation products. Guy, it is our hope that open-minded, adventurous listeners like you will enable the high-end audio community to go much further into the frontier of music reproduction than anyone has ever been able to.

There are actually no points made in the article with which we would differ! We certainly recognize the need for ventilation above some amplifiers; for this reason, we do have available ventilated top-plates to fit all our clamping devices. The extra charge is nominal, certainly worth the investment. Michael Green
President, RoomTune, Inc.

DIY LOUDSPEAKERS

Editor:
Thank you for the opportunity to respond with a "Manufacturer's Comment" to JA's measurements and impressions of the winning and runner-up loudspeaker designs from the 1991 A&S Speakers' Audiophile Sound-Off. As distributors of loudspeaker components and organizers of the event, but not the designer of either speaker system reviewed, it would be difficult and unfair for us to respond to JA's specific findings with respect to design considerations. But we can speak to the importance of expert analysis and criticism of the Sound-Off concept. One of the very first thoughts we had when we conceived this event in 1988 was that it would be a great opportunity for amateur speaker designers to have their designs auditioned and critiqued by experts in the industry. And with rare exception, our contestants appreciate and value the judges' suggestions and criticisms, regardless of how extreme they have sometimes been. In fact, our biggest mistake took place in 1990 when the review process became so intense that we failed to record adequate comments to pass on to the designers. So when JA offered to test the Sound-Off's winning speakers, we saw this as the culmination of the event, giving our contestants the reward they treasure most.

We noted with pleasure JA's observation that the drive-units and crossovers in both the Spear and Patterson speakers were very well matched from side to side, giving "lie to the conventional wisdom." The technologies for loudspeaker measurement and testing which are now available to manufacturers of speaker components, in addition to the increased automation of their factories, certainly contributes to this improved consistency. These advances are enjoyed now by the professional as well as the amateur speaker builder.

We would like to thank the 1991 Sound-Off judges: Keith Johnson, Reference Recordings' "professor," who was as sensitive and appreciative of each contestant's efforts as he was aware.
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of every strength and weakness in each design; Ken Kantor, founder and designer of NHT loudspeakers, whose gentle leadership gave structure and validity to our "methodology," and whose knowledge and acuity dazzled; and Corey Greenberg, whose contributions and expertise we would never dare to try to describe, or do without.

Finally, we would like to express our appreciation to Bob Spear, Ralf Patterson, the other contestants, and to all the hobbyists who enrich our lives and pay the bills. We are already looking forward to the 1992 Audiophile Sound-Off on another beautiful, autumn Saturday in San Francisco.

ARTHUR ROSENBLUM
President, A&S Speakers

SOTA COSMOS TURNTABLE
Editor:
Thank you for referring to the Cosmos as "superbly neutral" and "analytical." These have been David Fletcher's design goals for SOTA products for over a decade, and having the Cosmos recognized as such by TJN and Stereophile is a tremendous "pat on the back." The beauty of being neutral and analytical is that the owner can select electronics, loudspeakers, tonearms, and cartridges knowing that they will get the best possible sound quality the component has to offer. The Cosmos can have a "leaner" sound, a "richer" sound, or a more prominent bottom end (to name a few) by selecting the associated components that deliver these qualities. This sonic "variety" was discovered by TJN in his experimenting with different components.

Throughout SOTA's history, another goal has been to provide a product that is easy to set up and stays that way. We're happy to hear this was the case for TJN.

We are sorry you had problems associated with one of the last Cosmos 'tables to come from California. We at SOTA-Romeoville assumed the warranty service responsibilities when the company was purchased in February of '91, and repaired (quickly and at no charge) all reported problems of manufacturer's defects from those last products built in California. With regard to freight damage, our past experiences at Acoustat and CWD provided us the opportunity to learn much about the design of good packing materials. This experience has been applied at SOTA; the new packing designs are replacing old whenever improvements can be made. In our 11 months of operation in Illinois, we have had very few freight damage claims. Your readers can rest assured that freight damage is not going to be a problem for their new SOTAs.

Yes, we've worked hard to make the new, self-sensing pump much quieter than earlier SOTA pumps. We're proud of that fact, and find consumers and dealers alike greatly appreciate this low-noise operation. The self-sensing system utilizes a very accurate electronic pneumatic sensor that maintains the correct vacuum pressure in all circumstances. With the new larger silicone rubber vacuum lip, SOTA Reflex Clamp, Groove Damper Mat, and Self-sensing Vacuum technology, it has been our experience that virtually all records can be vacuum-sealed. Visually, vacuum hold-down is achieved when the vacuum lip is flattened parallel to the record. This is very obvious and easily observed. Release of the record can be simply accomplished by tugging on the lip, which "burps" the vacuum hold and releases the record.

To conclude, we were disappointed to see so much space devoted to problems with packing materials (that are not in use any more), and quality problems from "old" SOTA (which is no longer in business). Also, as in the words of a fast-food chain, "Where's the beef?" Where is the real review of the sonic performance of the latest Cosmos turntable, using various reference LPs on a reference system? The Oracle review in Vol.14 No.8 declared the 'table a winner and elaborated on the various test material and listening experiences. Furthermore, in the 30th Anniversary issue (January 1992) two cartridges priced at $1700 and $1900 are enthusiastically reviewed without batting an eye (or ear) at the price of the "analog" component.

Tell me why one should be sure there is an ocean in which to sail a yacht (or Cosmos), but not hesitate with a pricey cartridge? What will the consumer use their Ikeda 9R on, a rowboat?

HELEN GOREN SHAFTON
SOTA Industries

SONOGRAPE SD-22
CD PLAYER
Editor:
Thanks to Corey Greenberg for his delightful review of the Sonogrape SD-22 compact disc player [in February]. He gave a clear description of the character of this player, and noted its musicality. We view every component as being, first and last, a means for the enjoyment of recorded music, and Mr. Greenberg has clearly appreciated the suitability of the SD-22 to this purpose. In his words, he "got lost in the music every time." Becoming emotionally involved in recorded music is exactly what we believe high-end audio is all about.

Lew Johnson
Conrad-Johnson Design, Inc.

ADCOM DEALERS
Editor:
[Regarding the advertisement from Sound Advice, with a Wisconsin phone number, appear-
WASHINGTON DC’s music lovers turn to us to recreate in their homes the excitement of last night’s concert. Whether you’re updating a component or planning the ultimate home concert center, please visit us. We’ll see to it that you end up with the music you love, and not just a collection of equipment.

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ing halfway down the first column on p.331 of the January 1992 issue of Stereophile.] since [Sound Advice] is not an authorized Adcom dealer, their ad is false. They are unable to offer “Full Warranty” on Adcom products. Not only are they not one of our dealers, should they be able to somehow procure Adcom products for sale, they would be the original purchaser and our limited warranty applies only to the original purchaser.

Furthermore, most of these parasitic mail-order firms alter or remove serial numbers, in which case there’s no chance they’d have any warranty.

Thanks for your interest, diligence, and follow-up; it’s a pleasure to see one of the publications actually trying to clean up the false classifieds that are published each month.

MERRILL SMITH
Director of Sales & Marketing, Adcom

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Stereophile, March 1992

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CAN TUBES WARM UP CD SOUND?

How a very old technology can make a brand new compact disc player sound extraordinarily good

Our ultra-advanced new SD/A-490R includes two vacuum tubes whose classic design has remained unchanged for over 35 years. We and many other critical listeners believe that this anachronistic addition to an already excellent CD player design significantly enhances its sound.

THE AMPLIFIER THAT DOESN'T AMP.

Between a CD player's D/A converter and external output is circuitry called a buffer amplifier which actually doesn't boost the signal strength at all. Instead, the buffer amp is a unity gain device which increases output current, and acts as a sort of electronic shock absorber, isolating the relatively fragile D/A chip set from the nasty outside world of demanding analog components.

TUBES VERSUS SOLID STATE.

More than 98% of all CD players use solid state devices for buffer amplifiers. A handful of hard-to-find, esoteric designs in the $1200 to $2500 range employ one or more tubes instead. As does our readily-available $699 SD/A-490R.

In ultra-expensive preamplifiers and power amplifiers, tube sound is subjectively described as "mellower", "warmer", "more open and natural" or simply "less harsh than solid state". Objectively, it's safe to say that: 1) Produce even-order distortion versus transistors' odd-order distortion, particularly 3rd harmonics which are especially unpleasant to the ear, 2) Act as a pure Class A device when used in a buffer stage (Class A output is considered the optimal amplifier configuration) 3) "Round off" the waveform when they clip, while over-driven solid state devices cut off sharply, causing audible distortion.

THE SD/A-490R's OUTPUT SECTION.

Our new CD player uses two 6DJ8 dual triodes placed between the digital-to-analog converter and a motorized volume control. Operated at less than 30% of their maximum capacity, the tubes achieve a highly linear output voltage with very low static and transient distortion while providing very high dynamic headroom.

And because they're "loafing", at 1/3 their rated current capability, the SD/A-490R's tubes are designed to last the life of the CD player without replacement or need for adjustment.

THE ARRAY OF FEATURES AS RICH AS ITS SOUND.

We've designed the SD/A-490R to be both useful and easy-to-use. 21-key front panel or remote programming. Fixed and variable output. Programmable choices for equalization and dynamic range. Remote "shuffle" play. User-variable time parameters. 2 to 6 second variable fade length. Optical and coaxial digital outputs.

Plus our proprietary Soft EQ circuitry which compensates for variables in spacial (L-R) information and midrange equalization found in many CD's mastered from analog tapes.

BRING YOUR TWO BEST CRITICS TO A CARVER DEALER.

It's tempting to further reassure you with how well we think the SD/A-490R's tubes and Single Bit D/A circuitry improve the sound of a compact disc. But your own ears should be the final arbiter of quality. Bring them to a Carver dealer and compare tube output with solid state designs costing $1000 or more. Suffice it to say that almost all critical listeners not only are able to hear a difference, but prefer the sound of the remarkably affordable SD/A-490R's dual triode transfer function.

The Carver SD/A-490R.

At $1299, its suggested retail is 50% less than the nearest competitor with tube output.

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(Corey Greenberg on the sound of the Kevlar Reference Screens at the 1991 SCES, Stereophile, Vol. 14 No. 8-August, 1991.)

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COMING ATTRACTIONS (from p. 4) of NoNoise that he found effective. Our apologies for the confusion.

Finally, another correction, this time of a misstatement of fact that did not appear in the magazine. In a letter mailed to readers of Stereophile that took place in November and/or December 1991 (a mailing that made use of Stereophile's list of subscribers without Stereophile's permission or knowledge), Bob Carver mentioned that Stereophile had referred to him as a "neurotic" designer. This is incorrect. While Dick Olsher did use the word 'neurotic' in a 1989 review of a tube amplifier not made by the Carver Corporation, there is no mention of Mr. Carver or of Carver products in that review. Indeed, DO has assured me that he specifically did not intend Mr. Carver to be the subject of that remark.

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EXCITEMENT!
I always look forward to a good CES, no matter the work, tiredness, and endless trekking of hallways. I've got a lot of friends in the industry by now, and I even look forward to seeing my "enemies"—those people who, for whatever reason, have decided that Stereophile has it in for them. I make a point of seeking out such people; my experience has been that nothing wears down animosity faster than human contact.

It's particularly discouraging, then, when I come out of a CES wondering if people in high-end audio know what it is they're selling. I mean, really, if you've got a $10,000 speaker, a $14,000 digital processor, or even a $6000 amplifier (that's supposed to be inexpensive these days), you'd better be EXCITED! Who wants to buy a product for that much money unless it's a real turn-on?

I could understand the generally lower level of emotion prevalent at this CES—after all, a lot of manufacturers and dealers were happy just to still be in business. Our two-year recession (four years for high-end audio) has had a profound impact on people's optimism. Retailers go through periods where literally no one shows up in their stores. They get lonely! Manufacturers are buoyed up by the health of foreign markets, but even they have gone through big troughs in sales over the last year or two. (In spite of these experiences, there was considerable business optimism at the Show.)

I've remarked more than once in these pages on the increased maturity displayed by high-end audio in recent years. I personally promote an increased focus on hardheaded business when I talk to industry folks, an attitude which once earned me the descriptor Pure Business (shortened to PBA—Pure Business Archibald). After all, the better the products these guys make, the more I want them to still be in business next year.

Worrying about the recession and checking your dealer lineup to make sure you've got all the best guys can distract you from What It's Really All About: musical excitement. The only reason your customers buy insanely expensive products, or even reasonably priced ones, is their excitement about what that product can do for them when they sit down with their favorite records—or the revelations they'll experience upon returning from their latest visit to the record store or garage sale.

I just moved back into my house after a five-month remodeling. Although I kept up my unfortunately infrequent attendance at live concerts, and got to hear some of the offerings of various Stereophile reference systems in the Santa Fe area, I was without my treasured LPs for the whole five months. What a deprivation! Getting back in the listening chair has been wonderful, as I try to figure out my feelings about the Levinson No.26S, the Krell MDA-500s, and the Thiel CS5s (for a "Follow-Up").

But that doesn't keep me out of the stores. In fact, I acquired about 200 LPs during those five months, and even some CDs. Last weekend I stumbled across a bunch of used records at a local used-furniture store. One of the great things about used records at $1 each is that you can buy just about anything, not just music you know you like ahead of time, as long as the record is in at least passable condition. Among the 16 LPs I bought was one phenomenon: a 1965 Connoisseur Society recording of flamenco guitarist Manitas de Plata (little hands of silver). Arriving home, I just couldn't figure out why I thought six sides of flamenco was something I needed, but my skepticism was unfounded: this is one of the greatest records I've ever heard. It was made on an Ampex 350 (tubed) using four Sony C37 mikes (tubed), with virtually no edits. The selections were made from two eight-hour sessions done on consecutive nights; Manitas de Plata is one amazingly exciting artist. The thrills I experienced from this $3 purchase are what high-end audio is really all about.
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