HI-END HOME THEATER: THE PROCEED PAV
THE LAST SUMMER CES: A FULL REPORT
SONY'S SECOND-GENERATION MINIDISC
KRELL & JADIS
CARMINA BURANA
LOUDSPEAKERS FROM PARADIGM, PROAC ENERGY, ORACLE
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D

uring a recent visit to Canada's National Research Council, I noticed stuck to the wall of the prototype IEC listening room a page of results from one of Floyd Toole's seminal papers on the blind testing of loudspeakers. The scoring system was the one that Floyd developed, and that we adopted for Stereophile's continuing series of blind tests. "0" represents the worst sound that could possibly exist, "10" the perfection of live sound—a telephone, for example, rates a "2." The speakers in Floyd's test pretty much covered the range of possible performance, yet their normalized scoring spread, from the worst to the best, was just 1.9 points.

Some might conclude from this that the differences described in reviews are in general too small to be worth bothering about. Indeed, my recent cruises in cyberspace reveal that this question is the crux of the debate both between so-called "objectivists" and "subjectivists," and between "audiophiles" and the public: James Walley on The Audiophile Network, after he had carried out AB/BA comparisons on CD players and processors at matched levels, as described by Robert Harley in his "Critical Listening" article in the July Stereophile: "I can't tell any differences!!!...Well, actually, not really. I did hear some differences. But not the ones I would have expected, nor in every case." E. Brad Meyer on Compuserve's Consumer Electronics Forum, commenting on last month's "As We See It": "I believe...that any difference between components that can't be heard in a controlled test...is certainly not very important."

Jack English on The Audiophile Network: "In spite of our use of language, the reality is that many differences which are audible are of nearly infinitesimal magnitude. The more resolving the system, the more likely such an effect is audible. But how big of an audible difference is meaningful? To whom? For how much?"

1 On July 8, 1994, To join The Audiophile Network, call (818) 782-1676 (voice), (818) 780-6260 (fax), or (818) 988-0452 (modem).
2 On August 2, 1994, To join Compuserve, call Customer Services, (800) 848-8990, or buy a copy of the Compuserve Membership Kit at any good software multimedia store.

While most "controlled" tests are too insensitive to detect real differences between audio components—see "As We See It" in September '94—I have no argument with J/E's statement that many of the differences we write about are small. When you play this issue's splendid "Recording of the Month," for example, the sound is recognizable as being Mahler's Symphony 1 whether you play the CD on a Radio Shack portable or on a $24,000 Mark Levinson transport/processor combination. Within the universe of possible differences in sound, $200,000 buys you a relatively small change. But does "small" mean "inaudible"? For a long time, I've felt that the difference between an "objectivist" and a "subjectivist" is that the latter has had at one time in his or her life a mentor who could show them what to listen for.

This point becomes paramount when the subject of data reduction is considered. I suspect that the audible degradation introduced by the ATRAC algorithm—and remarked upon in this issue by RH in his review of Sony's second-generation MD machines—is small enough that it would probably go unnoticed by 95% of people. It's ironic, then, that the development of perceptual measurements for the assessment of data-reduced media will shine light on the correlation between what's heard and what's measured. Now that Stereophile has purchased a 20-bit-capable hard-disk editing system from Sonic Solutions to edit our recordings, an important project of mine has been to use that system's capability to subtract one channel from another to investigate the true difference between an amplifier's input and its output using music program, and to look at the hypothetical audibility of the signal residue when a mathematically amplified version of the amp's input is subtracted from its output. This, I suspect, will be a most revealing test.

Does the fact that an audible difference is small mean that it is not important? It seems self-evident that the value placed upon a small but real sonic difference must be an individual one. Take cars: Would you say that a Mercedes represents a sensible if expensive purchase, while to buy a Ferrari is pure self-indulgence, the high price purchasing only illusory improvements in performance? Or would you say that the differences between either luxury automobile and a Hyundai are not important when the cheap car gets you to the mall in about the same time, and uses less gasoline to boot? Because the answer to those questions will be different for every one of us, for a writer to take upon himself the decision regarding what will be important for his readers is simply arrogant. By contrast, in Stereophile I intend reviewers to describe what differences exist between components and to discuss whether or not such differences represent steps toward or away from higher fidelity. It is then up to each reader to decide for him or herself whether the sonic benefits a) exist, and b) are worth the price, so that they can make their own decision whether or not to buy those components.

The real question is whether it is worth designing and manufacturing components that only a favored few might be able to distinguish. But that's the raison d'être of the High End.

KEN KESSLER
This issue carries the last "Industry Update" column from Ken Kessler. I have been Ken's Editor for the last 12 years, and gave him his break as a high-end writer when I commissioned him to write a regular column for Hi-Fi News & Record Review on tubed equipment. Ken was made "an offer he couldn't refuse" by Audio magazine at the '94 SCES. Stereophile will be a bolder place, at least for a while, without his acerbic commentary on the UK audio scene. —John Atkinson

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CARY.
A WORLD-WIDE STATEMENT IN AUDIO AMPLIFICATION.
NOTHING BUT THE FACTS
Editor:
I am responding to Larry Archibald's request for comment in July's "The Final Word" (Vol. 17 No. 7, p. 210).

Having been a long-time reader of audio and hi-fi magazines (even before J. Gordon Holt established Stereophile), I think that disagreement among hi-fi publications (and, for that matter, within the confines of a given publication) are inevitable. Stereo Review, if it did not exist, would have to be invented for the partisans of the real thing to have somebody to beat up on. So-called "objective" data—charts, graphs, read-outs—are just as susceptible to this disagreement as are so-called "subjective" listening reports. Given the ambiguities of the reproductive state of the art and the deep complexities of music, this disagreement is what high-end commentary is all about. Tubes or transistors? This is a perennial controversy, and it will not go away short of the achievement of "absolute sound," which is not likely to occur within my or your lifetime. In the meantime, sorting out the disagreements of authorities is the price we laymen must pay to pursue our own fantasies of the best musical reproduction obtainable.

Thus, I think that The Absolute Sound and Stereophile should be up-front about their differences while pursuing the merits of the arguments in a courteous fashion. But, once stated, such an ideal is really not fully attainable. Corey Greenberg is no gentleman. The audio world is not peopled solely by such. Yet again, we laymen do need to hear those differences of hearing and measurements freely discussed—even when the differences escape the boundaries of good taste or impinge upon our own favorite prejudices. For example, I just know tubes are better than transistors. Ergo, I need to hear and hear about transistorized equipment—especially including the views of those auditors who talk about the great highs and bass slam of the good transistor equipment.

What I think most readers can do without, or will be satisfied with the smallest possible sampling of, is the ad hominem aspects of the intramural arguments and differences between competing magazine gurus. I'm not sure whether John Atkinson is a better human being than Harry Pearson. Beyond a certain point, I don't care. I have some interest in the backstage goings-on of hirings and firings of contributing editors—but not very much. I hope all this will be carried on in an atmosphere of appropriate journalistic ethics, but I don't want to follow the justifications very far into the details of who sat next to whom at The Absolute Sound's banquet.

What do I conclude? Continue to focus on the equipment and the music, not on the personalities. (This must be qualified and hedged: Corey Greenberg is okay. Pursue the disagreements and peculiarities of taste that are the heart of the high-end life. De-emphasize the internecine disagreements and polemics that reflect the necessarily fragile ego and fierce pride of profession of the high-end journalist.

Do I ask that the high-end journalist be something less than a real person? No. Merely that he (or she) concentrate primarily on the sound while recognizing that music and its reproduction is a part, after all, of imperfect human life—even imperfect ears.

THOMAS H. THOMPSON
Cedar Falls, IA

Thanks for your informed response, Mr. Thompson (and thank you to all the other readers who responded to my "Final Word" question). I completely agree that spirited debate on the issues—tubes vs solid-state, analog vs digital, CD vs DAT vs LP vs open-reel tape—is crucial to high-end journalism. Our point of view has been that TAS's views on these subjects are its own, and not particularly relevant to discussion in Stereophile's pages—unless they somehow affect the subjects themselves.

And now, in response to the wish expressed by the majority of respondents, this correspondence is closed.

—LA

SOME YOU WIN
Thank you for enclosing the larger issues in plastic. I finally got a copy of Stereophile that didn't get mutilated in delivery! Thanks so much.

RICK SIEGERT
East Helena, MT

SOME YOU LOSE
Editor:
This is just a message for anyone who thinks the polybag will solve the problems with damaged issues of Stereophile. It didn't work.

I just received the July issue, complete with what appears to be remnants of a polybag held together by the mailing label. Unfortunately, the unbridled carnage was not prevented from spreading to the cover itself, which has been mangled more severely than any issue I received during the non-polybag months.

I can only imagine what would have happened to the magazine had the polybag not been there. Certainly the cover would have been rendered unrecognizable, just as the polybag covering was.

All in all, the covering did afford some protection, but I suspect the postal service is capable of damaging just about anything—protected or not.

PAUL WYSOKI, OD
Alexandria, MN

SOME YOU GET WRONG
Editor:
Greetings... On p.81 of JA's B&W John Bowers Silver Signature loudspeaker
insightful, honest, and entertaining.

Of course, most of what is reviewed in your pages is out of my reach, but I always find valuable information that helps me to slowly put in perspective this ever-changing world of sound reproduction.

Donald Williams
Miami, FL

**SOME MAKE YOU FEEL**
**REALLY GOOD**

Editor:

After a couple of years away, it's great to have Stereophile back in my mailbox. Test CD 2 was all the carrot I needed (can't wait 'til it arrives...).

Reading R.F. Borowsky's letter (Vol.17 No.6) reminded me of a recent experience with my 14-year-old violinist daughter. I enjoy educating her about what to listen for in a good system. I've demonstrated soundstaging and tonal reproduction with my Sequerra MET7 and MET8W speakers, NAD 3140 amp, and Luxman D100 CD player. Recently I have been able to upgrade to an Acurus DIA 100 amp and Marantz CD-63 CD player (still love those Sequerra speakers —anybody got a pair of MET9s cheap)?

So my daughter is listening with a new pair of Kimber Peanut Butter & Jellys in the loop and says, "Dad, why does everything sound like it's in the same place??" I praised her good listening skills and explained that new equipment had to have time to break-in before it started sounding right. We let everything cook for a week and listened again. She did not have to strain to hear the improvement in depth, lateral placement, and instrumental timbre—both between the old and new equipment and between the first and second listening sessions. It was fun!

Thanks for the reviews of affordable, good-sounding gear. While the difference between my system and my dealer's Theta/Krell/NHT/Tiebout reference system is obvious, I feel I got the best value for my bucks, and this makes me happy. As we know: In the world of audio hobbyists, nobody is ever satisfied.

David Costas
Norfolk, VA

**HE LOVES IT**

Editor:

I'm a first-time reader and first-time writer. I am impressed! In your "Letters" section, you are totally honest, and open to criticism of your magazine. You could easily throw away the readers' negative comments, but instead you send them to print, bringing issues into the open. This is something to be admired. Your display of character has earned my respect. Rush me my subscription!

As for the reader who wrote about canceling his subscription and picking up Stereo Review—shame on you! Stereo Review's articles are not very deep, and are rather one-dimensional. They absolutely love every piece of equipment they review. As for my Stereo Review subscription—cancel!!

Red Mendrala
Longmeadow, MA

**HE HATES IT**

Editor:

I've had it. I recently resubscribed...
(grudgingly), thinking it was worth the one piece of good info every two or three issues. But I just can't take any more of your elitist, the-more-it-costs-the-better-it-is attitude. Of all the non-real-world garbage I've seen, you guys are the worst...

To think that anyone can seriously believe some of the crap that Stereophile dishes out boggles the mind. Did any consider that the purpose of all this is to enjoy music? Who cares if one component has an enctsy bit more something than another? How was the music? For a tiny difference in sound, anyone could get a lot more enjoyment out of the cheaper component and spend the difference on a couple hundred CDs. That is a real-world perspective.

Now, if the purpose of all this is to have beautiful and expensive works of art lying around that also double as a sound system, well, I can buy that. But let's tell it as it is, please. As for $1000/ft cable, green ink, $500 pieces of wood, etc., I won't even comment. Any rational human being (who doesn't have their head up their ass hoping to find some nonexistent magic elixir to fix some imaginary problem) knows the value of all that crap. So cancel my subscription.

NEIL YELLIN
Burlingame, CA

HE'S HAD IT

Editor:
I am not renewing my subscription and I wanted to make you aware of my reasons for not doing so. I have been a subscriber for two years and for the most part enjoy Stereophile. I had hoped over time that I would come to understand all the technical jargon that overwhelms the magazine. Alas, I am not an electrical engineer, and it is no longer enjoyable reading an article and not having the foggiest notion of what the writer is talking about.

I am a physician and, as such, think I am a reasonably intelligent person. I simply do not have the time to read a variety of materials to try to educate myself on all the electronic nuances that fill your publication. Not once have I seen an article or series of articles that attempts to bring the novice up to speed on basic electronics and acoustics. Please don't tell me that publishing a dictionary of terms relevant to the field fulfills this mission. I am really disappointed in your failure in this area.

And it is not like I can learn this at the local "high-end" dealer, because if you are not up to speed with your knowledge base, you are treated in a very condescending manner. Trust me on this one —I know of what I speak.

Let me close by saying that I think some of the letters to the editor have hit it right on the head when they comment that a lot of audiophiles are basically a bunch of snobs who want to keep their little fraternity elite and to themselves. I sense an attitude of exclusivity instead of inclusivity, and that saddens me.

RALPH B. PIENING
Mt. Pleasant, SC

We have occasionally published explanatory articles, the most recent of which was J. Gordon Holt's "A is for Ampere" in March 1991, but Robert Harley's new book, The Complete Guide to High-End Audio, is the most convenient source of the background information necessary to enjoy this and other audio magazines. It costs $29.95 plus $4.95 S&H. For credit-card orders, call (800) 848-5092—JA

HE HAS A NEW HOBBY

Editor:
Please discontinue my subscription to Stereophile. I'm no longer actively following the audiofide hobby—my computer hobby has replaced it, and I feverishly read computer-related publications.

By the way, the audio background and leftover audio equipment was helpful in setting up an awesome soundboard/audio system as part of my computer system. It's amazing how good audio CDs sound on the computer—provided one has a hefty amplifier, speakers, and subwoofer left over from numerous other audiofide systems.

Dale L. Petrick
Cathedral City, CA

JITTERY COMPARISONS

Editor:
It is with measured reserve and reluctance that I compose this missive because, as an electrical engineer charged with the responsibility of evaluating digital-recording electronics, I am torn between the urge to remain silent and the responsibility to draw attention to a subtle trend that has somewhat deleterious consequences: the use of sampling-frequency converters to suppress jitter. Stereophile is, in my humble opinion, a highly appropriate forum for such a letter, as it has made a valiant attempt to illuminate this subject through the writing of Robert Harley and through the publication of writing on the subject by such individuals as Rémy Fouré of UltraAnalog.

Robert Adams, a pioneer in 20-bit A/D conversion, is now in an engineering management position with Analog Devices, and his latest creation, the AD1890 IC, is a monolithic sampling rate converter (SRC) that is ever so cleverly executed. We were treated to a demonstration of this device wherein it was interposed between a very jittery DAT machine (9 nanoseconds RMS) and a D/A processor—both sampling at 44.1kHz with the ability to switch the device in and out of the SPDIF link connecting the two.

So appalling was the sonic improvement afforded by the 1890 that we promptly called for a halt to the playback. Thinking that such a device might serve a similar function in a professional recording chain, we arranged for a test of it. However, it did occur to us at that time that the use of a digital filter might substantially alter the data (musical information).

Fortuitously, as we started our tests, we were made aware of a device that redocks an AES/EBU or SPDIF signal with a very-low-jitter oscillator (the Sonic Frontiers Ultrajitterbug), using a part we know well and have great respect for: the UltraAnalog AES20 receiver.

It will be necessary to qualify the surrounding hardware setup for our test by saying that it is a carefully specified and controlled electrical environment with waveform integrity and jitter being continuously watched. Our tests involved two matched D/A processors that we warmed up for 24 hours and then fed from a common source with the sample-rate converter or redocking device in front of one converter only. As source material, we used CDs that were produced here from 20-bit masters, as well as discs from other labels covering classical music, pop, and jazz. Critical listening was done on three different days, in an attempt to verify results and draw parallels.

With respect to preliminary conclusions, it is difficult to attribute various sonic attributes to their exact causes; however, the SRC had no audible effect on artifacts we would consider jitter-related, although it did narrow the stereo image and brighten the program material—albeit very slightly. The SRC's 20-bit output had been truncated to 16 bits, possibly explaining the brightness; however, we are not sure about the causes of the narrowing of the stereo field, and do not consider this an appropriate forum for conjecture. On the other hand, the redocking device did not affect the program—except for, much to our surprise, a slight improvement in the resolution of detail (massed strings and cymbal brushes).

2 It should be noted that we do not consider the far-less-expensive industry-standard receiver, in its stock implementation, to be up to the AES20 in terms of immunity to jitter.
The new B&W DM-600 and DM-610 monitors have received the highest accolades and rave reviews from the demanding British audio press. Their sound is unmistakably B&W. Your B&W dealer can show you the reviews. Better yet, listen and you'll see.
A1000. ONLY IF YOU'RE OBSESSED WITH QUALITY.

When you listen to the A1000 Class A Super Pre-Main Amplifier with outboard power supply you'll know why *hearing is believing*.
We recently had the privilege of listening to Bob Adams speak about this accomplishment; we questioned him on this point, and he showed us an FFT plot of the output of his device when fed a jittery input signal. The plot clearly showed a broadening of the lobes of the single test tone, that broadening being directly proportional to the magnitude of the input jitter. We concluded that an SRC trades-off mathematical accuracy for jitter suppression, whereas a dedicated receiver, if properly designed and implemented (like the AES20 in the Ultrajitterbug or a rdithering box in relocking mode; eg, the Meridian 618), could suppress jitter without sacrificing mathematical integrity. We further felt that, in a low-jitter environment such as a well-designed CD transport, an SRC might afford the basis for subtle sonic degradation. The phrase: "the right tool for the job," still stands; no matter how good it is, a sample-rater converter is not without its particular assets and liabilities.

The current study of jitter in CD replay can be paralleled with conditions that prevailed at the dawn of the CD era. A decade ago, the buzzword was "error correction." Were the numbers that came out the same as those that went in? Timebase errors were largely ignored until just a few years ago, thanks largely to the High End's writings on the subject. Now not only do we study jitter inside the actual replay and record devices, but we find out that the transmission protocol (AES/EBU and S/PDIF) requires advanced engineering to prevent the data from imposing jitter on the embedded clock signal. Unfortunately, the physics dictates that, as precision (word length) increases to 18 and 20 bits, jitter must decrease. So, as with the original 16-bit CD standard of the early '80s, in which jitter was not considered relevant, we are faced with having to overcome a formidable obstacle in our pursuit of improved resolution: trying to extract again a very quiet clock signal from a noisy digital environment.

My closing point requires a fair amount of tongue-biting and should not be considered accusatory. In a formal scientific education, one develops a healthy respect for quantities both small and large. It would appear so far that jitter is expressed in picoseconds RMS, yet how are these measurements being made? Does anyone fully appreciate how short a picosecond is, or how hard it is to measure accurately? A picosecond is the reciprocal of 1 terahertz, which is 1000 gigahertz, which is 1,000,000 megahertz. Having just spent two weeks with the grandfather of jitter-measurement instruments—a Hewlett-Packard time-interval analyzer ($37,000) that will measure down to 50ps—some of the numbers I see the press bandying about truly amaze me as being unrealistically low. Remembering that if we average the deviation in period width of a clock signal over time, the average can converge to zero (no jitter); most of the devices generating the numbers being quoted by the press are averaging very heavily.

One should also remember that some of these measurements are being made by comparing the jitter of a known clock to the jitter of an unknown clock. Is the known clock stable? How is its stability being gauged? One manufacturer has advertised that his relocking box measures 50ps RMS out when the chips inside it are only capable of 200ps. Where are the other 150ps? Another manufacturer has written that the intrinsic jitter of his device is 1ps. The combined military establishments of the North Atlantic Treaty Organization have trouble measuring 1ps, and they have 24-bit converters capable of spotting a dime at one mile suspended 18" above the surface of a choppy ocean on a foggy day!

Long after hi-fi is relegated to the museum of the future, the laws of physics—upon which this hardware is based—will still be immutable, even with respect to the High End, an institution that has come up with irradiated alarm clocks and interconnects filled with deuterium (heavy water used as a moderator in nuclear reactors). Far be it from me to suggest that the line be drawn somewhere, but I truly do feel that, at some point in the near future, some respect should be shown for simple reality by adhering to the basic tenets of verification by more objective scientific measurements than have been in evidence so far.

David Smith
Dir., Recording Operations
North America
Sony Classical

I will be comparing the Sonic Frontiers Ultrajitterbug and the Digital Domain VSP SRC, which uses the AD1890 chip, in an upcoming issue.

—JA

FLAT RESPONSE RULES, OKAY?

Editor: JA's comments concerning on-axis frequency response, in his review of the Velodyne DF-661 loudspeaker in June '94 (Vol.17 No.6, p.75), are right-on. Even some 40 years ago it was well known that a flat, on-axis SPL response is an essential criterion of loudspeaker performance; that timbral accuracy is impossible without it.

D.E.L. Shorter and his BBC research colleagues knew this well, as did the rest of the British loudspeaker establishment. (Their views were published as early as 1958.) They also knew about the relative importance of a speaker's power response, but that on-axis response was more critical.

It seems that young hotshot speaker designers are nowadays more intent on reinventing the wheel than on learning from their elders. Unless you know your audio past, you're doomed to repeat it.

Dick Olsher
Los Alamos, NM

AMAZING

Editor: Re: Barry Willis's "The Art of the Scientific Illusion," Vol.17 No.5, p.49:

All told, Mr. Willis's essay was one which I read with great interest and some amazement. Reading the lines and between the lines of Mr. Willis's argument, I gathered:

• Truth and advertising, as products of Western rationalism, can be poles apart in high-end audio as much as elsewhere; Shun Mook Audio, as a manufacturer, probably uses deceptive advertising to promote its products. If advertising techniques were people, one would never take those described by Mr. Willis home to meet Mother—and Shun Mook products would probably be barred as well.
• Shun Mook products are analogous to Mr. Willis's baseball player's lucky socks such that, when they're used in a system, their user is engaging in behavior differing little from the baseball player's reliance on and utilization of his lucky socks —although the discs probably aren't given to rotting, at least within the user's lifetime.
• Some belief systems are not far removed from a sleep of reason which allows a frolicking of monsters. Underlying those systems are older needs which outlive any system in which they reside, and which are capable of taking residence in subsequent systems as they develop. These older needs are monstrous because they're irrational. Shun Mook products stand in relation to these monsters. The popularity of the discs is not based upon their efficacy, but rather upon the manufacturer's ability to capitalize on the irrationality of their users' needs and beliefs.

• Without a basis in logic of the Western variety, a product's foundation may be absurd or non-existent. Shun Mook products have their cousins in Peter Belt's innovations.

• When the act of hearing has been short-circuited by whatever means for what-
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ever reasons, one can fall back upon an underlying belief system to provide the information necessary to evaluate a product. Apparently, it doesn't do to examine closely the reasons for the short-circuit. Mr. Willis allows that some good has come out of the system from which Shun Mook products were supposedly developed. It has also produced vagaries, such as drinking powdered rhinoceros horn dissolved in liquids. If asked whether Shun Mook's products resemble the good or the questionable, one would have to tilt toward the questionable, given the tenor of Mr. Willis's argument. Precisely what Mr. Willis's evaluation would involve in terms of tests and their nature, as well as who is to do the testing, are unresolved or yet to be resolved. Presumably, Shun Mook products must remain in limbo until Mr. Willis provides the answers. How the company can remain in business given these limitations isn't addressed.

- Because Shun Mook products are "mystical" objects, according to Mr. Willis, their inherent virtues must be ephemeral or non-existent.

My guess is that 20 minutes of Mr. Willis's time at WCES provided insufficient exposure to Shun Mook products to permit a meaningful audition, and, hence, not enough information was available to dwell fairly upon what the implications of those products might be. Certainly Mr. Willis gave no indication that he offered those products any time beyond his experience of them at WCES. The upshot was an expression of views which didn't seem to differ much from those expressed on Internet, as related by Mr. Willis.

The one appeared to be derivative on the basis of a stated prejudice; the other was derivative of the same products by unstated implications based, quite possibly, upon similar prejudices. Both served to denigrate Shun Mook with possibly neither having troubled themselves to listen to the products for an extended period of time in favorable surroundings. Such may well be the prerogative of Internet surfers. With Mr. Willis, however, such a failure would have to be considered as indicative of an exquisite irresponsibility, given his association with Stereophile, and given the impact of such a writer's negative views upon a manufacturer's financial viability.

Mr. Willis, himself, may be after what he terms "the Convincing Illusion." Logic, however, would dictate that not every audiophile is consciously or unconsciously pursuing this quixotic El Dorado. Some, by the dictates of circumstance, might have to be content to listen at home to music which otherwise might not be available, given its uncommon performance in a concert or recital hall. The joy that recorded music provides by way of an audio system—whatever its components—may be its reason for being. The "Ultimate in Realism" and "Convincing Illusion" might constitute a garden of earthly delights for some audiophiles, but for others, one or both may be completely beside the point.

Contrary to Mr. Willis's intimation, Shun Mook may not be relying on a posited need to believe or on a need for magic, ritual, and mystery to move its products. Those products may be doing what the manufacturer claims they do, and, thereby, that above-mentioned joy would be increased. What users of Shun Mook's products hear with those products in their systems doesn't have to be based on the users' psychic contributions to those products—notwithstanding Mr. Willis's own beliefs in the matter.

There is a melancholy irony in the fact that Mr. Willis, who strongly lamented the current prevalent brightness of recorded sound in his "Toys for Boys?" essay [Stereophile, Vol.16 No.1, p.101], finds himself unable to employ the products capable of taming that egregious characteristic. If the vitriolic tenor of "The Art of the Scientific Illusion" is any indication, perhaps Mr. Willis, given the passion of his remarks, is less to be blamed than comforted, since the essay may have more to do with his unconscious projections onto the Shun Mook product line than with the exercise of his rational faculties. Self-respecting Hindus, I think, would point to his predilection and to his pain as being illustrative of maya, but not without an accompanying chuckle of compassion.

Charles Grossmann
Oakland, CA

The 6DJ8 Defended

Editor: The June issue of Stereophile contains a reader's letter concerning tubes such as the 6DJ8 that I feel is misleading and draws inaccurate conclusions (Vol.17 No.6, p.15).

First, Thomas M. Dawson commented that tubes have superior musical accuracy over solid-state because the inter-electrode capacitance of solid-state devices is in a so-called inferior silicon dielectric instead of a vacuum. Let me point out that the silicon dielectric of a transistor is generally only a few thousandths of an inch in dimension. There is an equal, or even larger, amount of inter-electrode capacitance in a tube caused by its leads passing through as much as or more of this same inferior silicon dielectric—in the form of glass—at the base seal. Worse yet, many revered tubes have a lot of capacitance caused by an even more inferior dielectric called Bakelite. Bakelite transistors, anyone?

The second assertion in the letter is that high-transconductance tubes such as the 6DJ8 tend to be more microphonic because of their tighter grid-to-cathode geometries. This could only be true if such tubes also exhibited higher grid-to-cathode, or input, capacitance, making them act more like a capacitor microphone. On the contrary, high-transconductance tubes were (or are?) designed with input structures designed to minimize input capacitance as much as possible. (The formula for calculating a tube's noise resistance shows that input capacitance is inversely proportional to noise.) In many cases, high-transconductance tubes have a more rigid than usual input structure to prevent shorts and interments due to their tighter internal tolerances—contrary to the implication in the letter.

The 6DJ8 can be an excellent audio tube, but it was originally designed for industrial amplifiers and TV tuners, not high-performance audio. Had it been otherwise, the manufacturers might have spec'd it out and done the screening for microphonic performance, and we wouldn't have to do it ourselves. To make the assertion, as the letter did, that all high-transconductance tubes are unsuitable for audio use, based on our misapplication of one tube type, is a disservice—just ask anyone who uses the high-transconductance 2A3 what they think.

Bill Kleronomos
Lyons, CO

Previn & the New World

Editor: In Peter Catalano's interview with André Previn (Vol.17 No.6, p.51), Previn talks about how he believes in and makes an effort to play the works of some American composers. Two that he speaks of are John Harbison and Harold Shapiro. He mentions how pleased Shapiro was with the recording of his Symphony for Classical Orchestra and Nine-Minute Overture, with the Los Angeles Philharmonic (New World 80373-2).

Regrettably, that recording, and all recordings in the New World catalog that feature Mr. Previn as conductor, were excluded from the discography following the interview. The other two releases are "Flight to Egypt," and other works by John Harbison," again with the LAPÓ (New World 80395-2), and Ned Rorem's Piano Concerto for Left Hand and...
Chances are, a perfect evening consists of unplugging the phone, centering yourself in front of your audio system and getting lost in your favorite recordings. And we bet when you’re not listening to music, you’re working so you can buy more music. Admit it, you’re obsessed.

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WorldRadioHistory
Orchestra, with the Symphony Orchestra of the Curtis Institute (New World 80445-2). The Rorem piece was released in March of this year and is receiving wide acclaim.

Mr. Previn is very committed to and proud of his work with these composers. Therefore, I would hate for mention of these works to be missed.

DANIELLE REDDICK
Associate Director of Publicity
New World Records

My apologies for the inadvertent omission of Mr. Previn's New World recordings from the discography.
—RL

THANK YOU, SAM
Editor:
Thank Sam Tellig, Thank Radio Shack. Thank Joe Grado. Thank them all for letting me enjoy the sound of music again. And thank you for maybe starting a new revolution in CD sound.

ST's article on the Optimus CD-3400 (Vol. 17 No. 6, p. 45) was so enthusiastic, his satisfaction with what he heard so compelling, that I rushed right out to buy one. Somebody else had read his piece. Every Radio Shack in the area was sold out.

I settled for their CD-3380, which appears to have everything the CD-3400 does, minus the DAC output (I resist the idea of buying a CD player and then spending more to make it listenable) and some needless do-dads. If the usual corporate-think holds, I figured, the remaining circuitry would be identical. The sound is everything Mr. Tellig said to expect. It also happened to be on sale for $99!

I've been noodling in the low end of the High End for years. More detail, more clarity, more focus, and better soundstage have been my war call since CDs were introduced. In my quest, I seem to have traded true musical pleasure for technical "accuracy."

I wonder if Sam's "vague dissatisfaction" with his Quads since converting from analog to digital listening is a national epidemic. I caught the bug, but I'm feeling better now. And therein lies the purpose of this letter, my first to any magazine for any reason: Isn't it time for the audio geniuses out there to bring us the best of all worlds?

Radio Shack has a head start, so I'll begin with them. They're just a few steps away from a worldbeater product. All they have to do is pick up the CD-3400 transport and circuitry, design-in remote capabilities, stick in one or two gutsy power supplies to give the player the cleanest 500mW ever, add a few hertz at either end of the frequency spectrum, work on the dynamic limitations, add a "flat" switch for the purists, make sure they don't lose any of what was good about the CD-3400, put the whole thing together in a cute and substantial home package, price it under $300, and remember to provide audio reviewers a sample. They'd sell a million of them.

The only thing the other CD manufacturers have to do is figure out what Radio Shack did right and put their own spin in it. There are a lot of listeners out there just waiting to buy these wonderful new products.

One last thing: Joseph Grado doesn't get the credit he deserves for developing great sound for peanuts. His cheapest cartridges have long been within spitting distance of the best. Now he's found the CD-3400 and shared it with the rest of us. This is the kind of person someone of Scottish ancestry can appreciate.

SCOTT McSWAIN
San Carlos, CA

THANK YOU, MR. GRADO
Editor:
Thanks to Stereophile and to Sam Tellig for letting us know about the new Optimus CD-3400 portable CD player—and also to Mr. Grado for telling Sam about it.

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Stereophile, September 1994
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But before you audition the M•si Series at your Mirage dealer, take in a live concert or two. Then you can experience for yourself just how unforgettable life-like the M•si's really are.
I haven't added anything to my system that has made such a dramatic increase in realism—and in musical pleasure—since I bought a pair of Quad Electrostatics recommended by J. Gordon Holt in the early days of Stereophile.

While I'm at it, I'll thank Mr. Grado again for his new SR80 headphones. The Grados are the only 'phones I've heard that make the binaural theory of recording a reality. My Stax Lambda earphones are clearer, and especially now with the new CD player. The Staxes give me a physical feeling of the recorded environment, but they have a restricted field on binaural recordings. On binaural nature recordings, for example, the Grados are spacious—just like the real thing.

DICK HARMAN  
Phoenix, AZ

THANK YOU, MR. TADDEO  
Editor:  
Here is my contribution to the CD-3400 debate: I am getting a deeper, more open, and detailed sound by combining mine with the Taddeo Digital Antidote.

DOUG LANG  
Coventry, CT

A $130 SOLUTION?  
Editor:  
Since its inception, I have led an uneasy life with CD. I have a particular distaste for high-frequency anomalies. "Hot" highs, high-frequency grit and grain, and icy-sounding playback drive me crazy. Listening to audio is no fun when your ears are bleeding. My analog system features a Koetsu Rosewood Signature, and I have no desire to change. That should give you a good idea of my listening bias.

Needless to say, I read with great interest Sam Tellig's column in the June issue on the Radio Shack Optimus CD-3400 portable CD player. Because I'm unwilling to part with eight to ten grand to get acceptable digital playback—call me crazy—I ran out to my local Radio Shack dealer to see what this was all about. To my surprise, the unit was still selling for the $130 sale price. I bought one and picked up a mini 'phone-plug-to-RCA-plug cord to connect the 3400 to my Adcom 600 processor. The player was defective out of the box, so I had to go back and get another. That gave volumes on the build quality. The second unit worked perfectly, but I could not get the digital out function to work with the cord I had bought. I decided to use it as a stand-alone player, and plugged it into my preamp. As a stand-alone, it was not all that impressed with its performance. It was considerably smoother than my transport (Barclay Bordeaux player), but the bass response was totally inadequate. Instruments were fleshed out, but dynamics were suppressed, and vocals had an "awk"-type coloration to them. It did smooth out the highs, but it just didn't exhibit enough oomph for my liking.

I substituted a Sony portable player and got a sound that was similar, but with a more up-front presentation. Incidentally, the Sony has the same type of hub as the 3400, but uses steel bearings instead of plastic fingers to hold the disc. Bass was considerably better, but I was using a DC converter to power the unit. Overall, both units were no match for the Barclay for resolution and dynamics.

Frustrated, I tried the supplied line-amp cable to connect the 3400 to my Adcom. To my surprise, it worked. Why the other cable did not work is a mystery. Close inspection of the two mini 'phone plugs revealed the line-amp plug to be slightly longer. I guess all mini plugs are not created equal.

3 Associated equipment: Jeff Rowland Coherence 2 preamp; Adcom KSA-100 Mk.II, and Hafler 500 power amps; Apogee Stage speakers and custom-made subwoofers (I had a Mini Grand system before there was a Grand); modified Dahlquist DQLP1 crossover; SOTA/SME/Roentgen analog system, Power Wedge line filters, Krell Path speaker cable, and various interconnects.

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The F18. Made by fanatics, for fanatics.
With the 3400 acting strictly as a transport, things changed dramatically. Gone was the anemic bass, replaced with a full if not particularly articulate bottom end. Midbass was a little exaggerated, and could get annoying depending on the recording. The “awk” coloration in vocals disappeared completely, and the smooth but previously muffled highs cleared up considerably. I flipped the high-frequency switch on my Apogee Stages from normal to high, and the sheen and air around bells and cymbals returned. Gone was the steely irritation that I hate so much. Expunged was the icy-thin presentation that characterizes so many CDs. I was now hearing a much smoother sound, with a genuine sense of real space.

Dynamics and overall resolution, while much better through the Adcom 600, are still not the equals of the Barclay. Detail freaks probably will not care much for this player, either as a transport or as a full-function player. However, if tubes keep you warm and Koetsus are your idea of analog fun, the Optimus CD-3400 just might be the answer for you. I liken it to looking at a real person in real space from a slight distance through a thin fog—you can’t make out every last nuance or detail, but there is enough there to let you know that it’s real. Up until now, CD has been like looking at a cardboard likeness of that person through a high-resolution lens. The edges are supremely defined, the colors are saturated, but the ambience is missing—it’s still nothing more than a cardboard likeness.

Will I get bored with this transport? Probably. But it will do just fine until something better comes along that won’t force me to mortgage my house to own. There is better digital playback available than the Optimus CD-3400/Adcom 600 combo, but it is going to cost you a ton of money to own it. If you would rather not part with kilobucks on a technology that seems to evolve weekly, this combo will sell you back only $880, and it will stack up to anything costing up to five to six grand. So if analog still gives you the warm fuzzies and CDs leave you cold, take heart—there is an affordable solution. Thank you, Sam, Lars, Joe, Dick, John, and Mrs. Calabash, wherever you are!

MARK MORSE
Palm Desert, CA

ADMIRATION FOR AMPHIBIANS

Editor:
Inasmuch as you permitted Sam Tellig’s article on the Radio Shack Optimus CD-3400 to be published (Vol.17 No.6, p.45), no one could possibly accuse Stereophile’s editor of pandering to the plutocrats. Even though the CD-3400 looks like a toad that’s been run over by a 14-wheeler, it proved that Sam’s panegyric was in no way hyperbolic. When connected by a Clear-Stream Digital cable to an Audio Alchemy DTI interface and Digital Decoding Engine v1.0, the violins soared from my six vintage Tannoy and were as creamy-smooth as a lightly oiled and talcum-powdered baby’s ass. (Corey Greenberg has seriously infected my prose.)

The CD-3400, of course, cannot transform shit into shinola (what can’t?), but give it the good stuff and it can transmute one’s room into a Valhalla of airy and azure ambience.

So let praises sound to Radio Shack, Stereophile, and all the Radio Shackers and readers who have opened the ears of the poor, the retired, and the denied to the possibility of getting good sound without sustaining fiscal disaster. Now, if this estimable little squashed frog will maintain its magic... ORREN S. CHAMPER
Jackson Heights, Queens, NY

AWDINAWY?
Editor:
In the June 1994 Stereophile (Vol.17 No.6),

THE PURSUIT OF PRECISION

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Stereophile, September 1994

WorldRadioHistory
a great cry was heard across the land: "Harken ye! We have heard the Radio Shack Optimus CD-3400, and it is exceedingly good!"

As it happened, I was looking for a portable CD player, so I bought the CD-3400 and am using it as a portable, with the excellent Grado SR60 'phones (and others). And for $130, I'm not thrilled, but I am satisfied. The thing works, it has some useful features, and it sounds pleasant, nice, "musical." But (you were waiting for the "but") it provides very little depth, it doesn't really image, there's virtually no sense of space or "air" there. Rather, everything tends to be in my ears rather than suggesting that sound is coming from a variety of "out-there." In fact, I derive more of a "hall sound" from my ancient, original Sony Walkman (Model FM-1) when listening to our two remaining FM stations than I do from my CD-3400.

When guys like Joe Grado, John Curl, and Dick Sequerra rave, we expect something special. To me, the Optimus CD-3400 is like a wed wose: awdanawy. Are you guys trying to goose what you perceive to be complacent high-end manufacturers? Or is it all a belated April Fool's Day joke? ¿Qué paso????

Leonard G. Birnbaum
Plainfield, NJ

HEADROOM FOR COREY
Editor:
Just finished reading the second major editorial on the Radio Shack Optimus CD-3400 in July. I'm going to side with Corey's assessment. It's a very good portable CD player, but if you're buying it for use at home, you'll be better served by an NAD 502. However, if you've got money to goof around with, there may be some value in owning one. No doubt this is the most commonly owned product in all of audiophiledom, and provides a unique point of common experience.

Corey mentions a couple of adapters for the 3400. I'd like to recommend some alternatives. The most common failure in a portable CD player (or any portable Walkman, DAT, MD, or DCC, for that matter) is that the jacks fail, or become intermittent. Whenever possible, therefore, you should reduce the strain on the jacks. The easiest way to do this is to use 90°-angle adapters. They will reduce strain on the jacks by allowing a degree of freedom in which the cable can wobble.

The following 90°-angle adapters can be bought from Radio Shack: 274-395. This all-metal mono-miniplug-to-RCA female 90° adapter will allow you to use your favorite digital interconnect with the CD-3400 digital output;

274-372: This 90° stereo-miniplug-to-stereo-minijack will allow you to use your Grado SR60s (or any miniplug-ended headphone) with the CD-3400, and has the added advantage of permitting better clearance when your CD-3400 is in a carrying case.

Other useful items:
274-369: Converts the stereo miniplug into left-and-right RCA females so you can use your own interconnects;

274-1571: If you want to build your own outboard battery power supply, this is the power plug you'll need.

Now, about JA's footnote that the CD-3400 is susceptible to interference generated by the HeadRoom DC-DC converter: He should have just called—the fix is very easy. There are holes on the circuit board where you can strap the 0V line on the power input to the 0V DC-DC converter output—this prevents the problem from occurring. All HeadRoom portable amps are now shipped with this strap in place. (Originally, we weren't sure which position provided the most reliable hum rejection. Turns out this RF-interference thing is the real problem.) Any customer who finds that the HeadRoom amp interferes with a portable CD player, TV, or tuner should give us a call.

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so we can arrange for the jumper to be installed—free of charge. DIY-ers can call for instructions.

For what it’s worth, I like Stereophile’s bigger size; as far as I’m concerned, the next dimension to explore should be the thickness. Who said too much of a good thing is bad? **Tyll Hertens**

President, HeadRoom

**My vote’s with Corey**

Editor:

Figuring Corey Greenberg is going to take some flak about his assessment of the Radio Shack Optimus CD-3400, let me add my two cents’ worth.

I purchased a CD-3400 (fortunately at sale price) several weeks ago on the strength of reports heard through “The Audio Grapevine” and various “Audio Gurus.” When Sam T. raved about the Radio Shack in Vol.17 No.6, I became even more baffled!

Simply stated, either there exists a wild unit-to-unit variation in this product, or Corey is right-on about “the mushroom rooms in the salad.” Since I’m not into headphones, nor do I currently own an outboard DAC, my comments only apply to the CD-3400 as a single-box CD player. As such, we get exactly what we pay for. A $129.99 (hopefully you’ll get it on sale, too) CD player might accidentally be great with headphones, but it’s not competitive with the single-box players considered to be at the bottom of the high-end digital ladder! Players like the Rotel, Parasound, and the current NAD will eat this thing for lunch! Forget Krell and Levinson.

And now we’re starting to see accessories designed to “enhance” the performance of the CD-3400. A $300 power supply! It sounds best as a transport with a series of black boxes connected by overpriced cables to the tune of $1000 invested! Let’s get real. Reminds me of the guy who spends $10,000 tricking out a $6500 Nissan pickup and ends up with something that isn’t worth $4000! Why didn’t he buy the Dodge Ram in the beginning? Sorry, Sam, but my vote is with Corey on this one. **Mick Wolfe**

Tucson, AZ

**Comparisons**

Editor:

Hold on there, Sam Tellig, before you go completely overboard on Radio Shack’s Optimus CD-3400. I own a $129.99 clearance Sony CDP-591, now superseded, which I picked up from The Good Guys in Northridge, CA—in pre-earthquake days. In my system the Sony equals or surpasses the CD-3400 in sense of air, and it tops it in resolution, soundstage, and dynamics.

What’s more, there’s a good chance that other modestly priced CD players yet to be “discovered” by the High End provide that great sense of air you seek. More about that later.

On your ecstatic recommendation, Sam, I bought the CD-3400. I hoped to reach sonic nirvana with that little clam-shaped Optimus. I decided to A/B it against my Sony CDP-591, so I fed both into the Nad 1300 preamp, Harfler DH-200 power amp, and the top-of-the-line Fried CS1L satellites and Fried subwoofers.

My first misgiving about the CD-3400 came with my key test for “air”: track 2 of the Beecham Scherazade. I particularly listen to the back-to-back bassoon and oboe solos following Steven Staryk’s violin intro near the beginning. Their sounds should float over the right-center of the orchestra. In sense of air, it was a toss-up between the two players, but the Sony snapped the two instruments into sharper focus.

Another benchmark for “air” is “So What,” on Miles Davis’s Kind of Blue. I especially key in on the passage near the beginning where drummer James Cobb gives a big, punctuating cymbal crash and lets the cymbal sound die away. That shimmering sound should hang in the air; it did so longer with the Sony. There was also more air with the Sony where Cobb’s sticks tap the cymbals behind the solos of John Coltrane, Davis, and Cannonball Adderley. As for defining the sounds of the saxes and trumpet, the CD-3400 fell seriously short.

What made me decide reluctantly to return the CD-3400 under the Shack’s generous policy was its lackluster performance in the opening minutes of the RCA Victor Living Stereo of Gaite Parisienne. Sam, it wasn’t even close. With the Sony, there was such a bloom of air around the instruments—particularly at the center and back of the hall—that it made the Optimus’s portrayal of space seem almost dry in comparison. Incidentally, Sam, the CD-3400 did blur and coarsen the sound of the strings.

As I indicated earlier, there’s a good chance that other modestly priced machines may provide the sense of air you’re looking for—even better than the old Sony CDP-591 or the Optimus. I checked with Steve Heisler, a sales counselor at Good Guys. The direct successor to the CDP-591 was the CDP-311, also a 1-bit MASH. That sold for $149 before it, too, was replaced. The current descendant is the CDP-211, nominally $139, on sale at $99, available on special order. Heisler says that the Philips CD-920—a

1-bit, $149 job that has a digital output, no less—is worth testing out.

However, from my experience with high-fidelity—going back to 1948—the significant thing you’re going to have to do to determine one CD machine’s superiority over another in its ability to convey a sense of air is to select speakers that are unquestionably at the pinnacle in that parameter.

Use the CD-3400 as a reference, if you like. With an outstanding air-superiority speaker system in place, you should easily be able to determine which CD players fall below or surpass the CD-3400’s ability to portray air. But, along the way in your search for air, don’t overlook the parameters of resolution, soundstage, and dynamics—they still count. **Stanley Slome**

Granada Hills, CA

**Dazed & Confused**

Editor:

This letter is in response to Stereophile’s recent reviews of the Radio Shack Optimus CD-3400 CD player. You folks have left me totally confused and also amazed at your lack of common sense.

In June I read Sam Tellig’s story about the CD-3400 (Vol.17 No.6, p.45)—he had just found the greatest giant-killer known to the audio world! Here was a CD player that was musical and cheap! He enthused about the “air” and ease of listening, and mentioned the story about a high-end dealer that preferred it to much more expensive units. Imagine my surprise when I open up your July issue (Vol.17 No.7) and read that Sam’s opinion of this unit has shifted from cheap, musical giant-killer to “As a portable player, fine... But for your system, I think you need something better.” I’m just amazed, and I’d like an explanation.

I bought the CD-3400 based on Sam’s first report. It’s my first CD player—I decided to listen to LPs until a good, cheap CD player came along. I’m reasonably happy with the unit—it is quite musical—but, as Sam mentioned, it lacks some bass. I had hoped that Sam would write about improving the sound of the unit with low-cost, simple modifications (ie, different interconnects, 6V lantern battery, realistic damping, etc.) rather than testing all sorts of expensive add-ons that nobody is going to take seriously.

Regarding common sense, Sam said that the unit sounds better running off its batteries. Why didn’t Corey Greenberg listen to it that way??? Why didn’t Robert Harley measure it that way, even after commenting on the reduced noise when batteries were used? Corey, did
Rotel is not a typical audio company. Unlike the corporate giants of the audio industry, Rotel is a family owned business. We don’t make video recorders, bread makers, or electric pianos. Instead, we have spent the last thirty years building high fidelity components that meet two rigorous criteria — musical accuracy and honest value. While we benefit from low-cost production in our own Asian facilities, our design work remains in our R&D facilities in Britain, where an audiophile pursuit of perfection is a passion. Rotel engineers are, first and foremost, music lovers who labor over their new designs like proud parents. They listen to the results, then tweak and adjust until the new product meets exacting musical standards. All Rotel products are truly built from the inside out using premium parts. Components are hand selected for their sound quality and built by industry leading suppliers around the world.

**Rotel 990.** “Peak current output was 211 amps, almost twice the value of any other amplifier in this survey! To use the term coined by Consumer Reports, this is a Best Buy.”

The Audio Critic (Aug 93)

“The 990 is yet another triumph for Rotel, proving once again that the ear is mightier than the slide rule spec in delivering music for the dollar.”

IAR Hotline (Jun 92)

**Rotel 980.** “The inexpensive, frill-free Rotel doesn’t fall short of the mark when it comes to playing music. It lives up to its promise of power, but its capacity for blood and thunder doesn’t make it an amp that impresses solely with its might. It’s lusty, but also involving and musically revealing.”

What Hi-Fi? (Sep 93)

“. . . the RB980BX proved to be one of those products reviewers dream of . . . more than just another modestly priced amplifier, competent but uninspiring. The Rotel . . . got up on the high-end high-wire without a net – and performed.”

Thomas J Norton, Stereophile Vol.15, No.11, Nov. 1992

**Rotel 965.** “Sound quality was superb . . . Clarity, transient detail, and high-level punch all were exemplary. In short, Rotel’s RCD-965LE clearly delivers CD sound that approaches the highest standards of the day, for less – substantially less, in some instances – than many competitive alternatives.”

CD Review (Jan 94)

“. . . every aspect of the ’965 has been optimized with a single goal in mind – sound quality. It is this preoccupation with the finest detail that is reflected in the player’s overall performance. Nothing, but nothing, has been left to chance.”

What Hi-Fi? (Dec 91)
Virtually every product claims to be "the new standard." With the frequency of these claims, true value is often obscured in the noise. Resolution Audio invites you to compare our products against all others and decide for yourself what value and performance truly mean. Our products speak for themselves.

Both the Reference 20 and Quantum Digital Processors are based on the new UltraAnalog D20400A converter. The Quantum and Chronos Jitter Attenuator also feature the low-jitter UltraAnalog AES 20 receiver.

To learn more about our products call, fax or e-mail. Along with the product information, our new white paper will help you cut through the confusion of digital audio in the 90's. Then go listen. You won't be disappointed.
you really use a $2 piece-of-junk Y connector from Radio Shack for a Stereophile equipment review??

I think you guys dropped the ball.

LAWRENCE COOPER
Birmingham, MI

CAN YOU HEAR ME KNOCKING?

Editor:
It blows my mind that all of you talented people missed a major screw-up on the Radio Shack CD–3400 CD player.

If you play it through the headphone jack, you will notice a double clicking sound in the right channel during quiet passages. I would have let this go, attributing the fault to my falling asleep with the $9 "special" Radio Shack headphones in my ears and pulling the damn machine off my nightstand about a dozen times. Lo and behold, my buddy, (world-, or at least Bay Area-, renowned) audio critic Sandy B., told me last week, without prompting, that he had heard this clicking on not one, but two of the now-famous 3400s, which he had bought and soon returned to the Radio Shack palace. Sandy believes that it could be a circuit or something in the jack that’s picking up the spinning of the CD.

Three machines, three clicking noises in the right channel of the headphone jack. Help me with the math, fellas!?

By the way, I’m keeping the machine (how many other pieces of gear make Donald Duck noises when you change tracks?), and just sent off my subscription to Stereophile. Go figure.

NEIL KALLINS
Greenbrae, CA

The clicking noise only happens when the batteries start to run low; it also doesn’t occur through the line-out jack. Incidentally, a tip from internet contributor Brad Sanders, as posted on The Audophile Network—(818) 988-0452: the CD-3400’s sound improves when its display is blacked. This is because the four LEDs that illuminate the LCD result in a constant high-current draw on the same voltage regulator that powers the audio circuitry, keeping the impedance of its series-pass transistor low.

—JA

BAY AREA VINYL

Editor:
I enjoyed Jonathan Scull’s March article on New York record stores and thought that you and your readers might want to hear about some of the finer vinyl outlets in the San Francisco Bay area.

Village Music (9 E. Bithedale, Mill Valley, CA 94941, (415) 388-7400), the most well-known record store in the area. Aside from vintage vinyl, you can find magazines, books, videos, CDs, photos, and other memorabilia. Especially good for old R&B, soundtracks, and jazz.

Down Home Music Store (10341 San Pablo Ave., El Cerrito, CA, (510) 525-2129) specializes in roots music—country, bluegrass, blues. Skimpily on vinyl, but lots of CDs, cassettes, and books, and a nice stereo system for customers to enjoy (MB Quart and a pair of sweet-sounding homemade speakers).

Amoeba Music (2455 Telegraph Ave., Berkeley, CA, (510) 549-1125). You never know what you might find at this store—high turnover of vinyl and used CDs, all reasonably priced. Much avant-garde and classical as well as jazz.

Also in Berkeley is Musical Offering, which specializes in classical CDs and has a nice in-store coffee shop. If you’re feeling hungry while in downtown Berkeley, try Hong Kong Village—a fine, reasonably priced restaurant near the downtown Bart station. Happy shopping!

DAVID MORGAN
San Rafael, CA

ONE MORE ON THE FINAL FRONTER

Editor:
Regarding J. Gordon Holt’s “Space . . . the Final Frontier” article (Vol.17 No.3, p.60) and the letters responding to it, I agreed, naturally, with Gordon on most of his points, but thought that JA had a good point about a speaker’s high-frequency dispersion being primarily forward of the listeners and not reflected off the front wall. I was surprised that, in such a comprehensive article, Gordon left out both Ambisonics and binaural. There is more quantity and high-quality ambience information on both than there is with SQ or QS. And there are a couple hundred CDs available today of those formats, while there are almost no QS or SQ available anymore.

(I touched on this in my article on Nimbus and Ambisonics in Stereophile, June 1987, Vol.10 No.4.)

It was exciting to see that Onkyo had finally included an Ambisonics UHJ decoder in their SV909 receiver, but then disappointing to find that they left out the “Stereoe Enhance” circuit which was a major part of the Minim decoders. This feature is a sort of blend of the Hafler L–R circuit with the more seamless surround of Ambisonics and results in the best surround–sound from two–channel stereo of anything I’ve ever heard. And no one is forced to buy special UHJ CDs. Unfortunately, the Minim decoders had, as you observed of most surround processors, disappointing electronics.

I’ve been waiting for Stereophile to review the Cogent Research SPI box; guess I’ll have to review it myself in Bound for Sound to get them some needed exposure. Both binaural and Ambisonic recordings sound fabulous via the Cogent Research four–speaker frontal arc arrangement, with simple L–R ambience going to two more matched speakers in the rear (the Dynaco QA–1 passive box and a separate amp) work better for this than any active surround processor). In fact, I now prefer that effect with binaural recordings to the Lexicon CP–3 binaural panorama circuit, which was previously the only way to maintain most of the binaural localization realism when using loudspeakers. Problem was, the sweet spot was tiny; and with the Cogent Research, it’s quite wide. Additionally, any ordinary stereo material with good L–R information decodes beautifully via the SPI box. That’s why binaural sounds so great with the Cogent Research—it has plenty of clean, accurately phased L–R information! (Your letter–writer from Singapore in the July Stereophile [“Height Information, Please,” Vol.17 No.7, p.11] is just one of our Binaural Source customers who has been telling us how much they enjoy their compatible binaural CDs on anywhere from two to eight loudspeakers!)

When Gordon wrote that when people familiar with live sound in a large space hear reproduced surround–sound, “. . . they’ll never be satisfied with two channels again,” he should have said “with two speakers again.” First, two channels are all that arc needed for binaural, and of all the most lavish surround systems—only B–format Ambisonics comes close to binaural on headphones. Second, the simple Hafler-type ambience retrieval from two ordinary stereo channels is sufficient on well-miked recordings for achieving a realistic–enough surround field for classical and jazz. I have personal reservations about all multi–channel systems so far except B–format Ambisonics, and, as you said, neither Ambisonics format is happening in the real world.

[Meridian demonstrated Ambisonics playback at the recent Summer CES—Ed.]

(But by the way, I trust that your poor record of never reviewing any of the binaural CDs I’ve sent to Stereophile is being corrected with an upcoming review of the Pasadena Symphony/Jorge Mester AUoracle compatible ($50) binaural CD that Larry Kramen of Newport Classics sent you. ]

JOHN SUNIER
Audiophile Audition

A review is in the works.

—JA
When Denon, with the audio industry's longest heritage of digital design and music recording, charged its most talented engineers to create a range of cost-no-object components, clearly the goal was not for immediate sales. Instead, Denon applied the most advanced technologies to improve the resolution, integrity and stability of digital data transmission to achieve accurate, transparent sound reproduction and pure musicality.

What uniquely qualifies Denon in this endeavor is that the Company shares the same dedication to music of many esoteric manufacturers, but combines this fervor with the technology and resources gained through 83 years of recording music and building record/playback components. No other high-end or mainstream audio manufacturer can make this claim.

The intensive research and design that has gone into the very limited edition of S-Series components could never be recouped through sales, even at their seemingly lofty prices. Instead, Denon, in keeping with its "Design Integrity" philosophy, will explore ways to incorporate many of these advances in future Denon components. But, for those of you who can afford not to wait...

TOP: The DP-S1 CD Transport is constructed using three levels of mechanical and acoustic isolation and a high-resolution laser system to deliver ultra stable, jitter-free data. $8,000.

MIDDLE: The DA-S1 D/A Converter employs ST-Genlock clock and data transmission with Denon's exclusive ALHYA Converter System to achieve a full 20 bits of data integrity from any CD or other digital audio source. $7,000.

BOTTOM: The P0A-S1 Monoblocks combine parallel, complementary bipolar power supplies with a full differential power MOS-FET amplifier design to deliver more than 1,400 Watts into a 1 Ohm load. $20,000 each.

DENON
delivered channel, then the High End will have a serious problem to deal with.

Unfortunately, both panel sessions here were simply discussions; there were no demonstrations at this CES of any of the proposed 5.1-channel systems. The first seminar was largely an exploration of the status of Dolby Surround Digital—Dolby's 5.1-channel system based on their AC-3 data-reduction algorithm. Stereophile's Corey Greenberg moderated, and Steve Thompson of Dolby Labs, Mike Fidler of Pioneer, and Michael Heiss of Harman participated. Not surprisingly, the session was heavily pro-Dolby Surround Digital (Pioneer and Dolby are prime players in bringing the format to market); Mike Fidler estimated that products—replacing one of the NTSC laserdisc's analog channels with the data-reduced, multi-channel, digital signal—would be available sometime in 1995.

The second seminar took an opposite tack. Joyce Fleming of McCormack Electronics moderated, and Terry Beard of Digital Theater Systems (DTS), Bert Gall of Philips Consumer Electronics, Gary Reber of Widescreen Review, and Bob Harley of Stereophile sat on the panel. This panel recognized the controversial nature of these data-reduced, multichannel systems. Both Philips and DTS have 5.1-channel delivery systems under development that could compete with Dolby's system. Sony (who did not participate) has its own theater digital sound system—SDDS—and could possibly be a future home-market player, though no one has as yet made such a public pronouncement. The panel openly expressed the opinion that we should not be locked into the Dolby system as a multichannel delivery format for laserdiscs (or CDs) without the high-end audio community having the opportunity to evaluate the competing systems and comment on their relative sound qualities. How, for instance, will they stack up, if at all, as potential high-end delivery media?

Bert Gall offered the opinion that no current formats proposed for 5.1 channels on existing carriers will likely satisfy the High End, but that, in the next three to four years, high-density media may well become available that will. DTS, however, is proposing an alternative to the Dolby system which will use all of the digital soundtrack real estate currently present on laserdiscs (approximately 1.4 MB/second) for its 5.1 channels. DTS's Terry Beard argued that his system—which uses a more advanced data-reduction algorithm than that presently used in current DTS theater systems—is sonically transparent and provides 20-bit resolution on each channel. An ideal resolution for all of this would be for representatives of the high-end press and high-end manufacturers to get the opportunity, over a reasonable period of time, to evaluate each proposed system and give their verdicts—before irrevocable production and marketing decisions are made. Such an assessment must include judging each system's ability to transparently process a pristine, original music source. "Good enough for film soundtracks" must not be the criterion—in any event, it's an injustice to the best soundtracks, not to mention the potential for advancement as film sound is subjected to the scrutiny that top-quality home playback will allow. DTS has offered to loan two-channel versions of their encoder/decoder to the high-end community for evaluation when it becomes available. John Kellogg made a similar offer on behalf of Dolby on a similar panel at the Stereophile High-End Hi-Fi Show in Miami in April, but he left Dolby soon afterward to take another job. His offer may have been made simply in response to DTS's, as far
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JD-1 CD Turntable
as I know, it has not been officially sanctioned by Dolby Labs. [See this month's "Manufacturers' Comments."—Ed.]

In Dolby's defense, they did arrange for Stereophile's Peter Mitchell to attend a film-dubbing session, where he had the opportunity to compare an original soundtrack mix with a Dolby Digital transfer of it (see PWM's August '94 Industry Update, Vol.17 No.8). As I write this, it's possible that other writers may be afforded the same opportunity. Though such a step is much appreciated, there are three difficulties with it: 1) the film system that was demonstrated uses a slightly lower bit-rate than Dolby's proposed home system (320kb/second is 384kb/second), and at these sparse data rates, every extra bit helps; 2) the program material is limited to the particular soundtrack being mixed, and may not show up all potential problems in the system; and 3) the turf and playback system are unfamiliar to the listener, and not representative of high-resolution home systems.

The Home Theater Concept May Well Owe Its Very Existence To Dolby And Pioneer.

As mentioned above, the two presently proposed systems—Dolby and DTS—are fundamentally different in two respects: the Dolby system uses a data rate of 384kb/second for all 5.1 channels, and the information is to be placed in the space currently allotted to one channel of the analog soundtrack on a laserdisc; DTS uses the current digital tracks to provide a full 1.4-mb/second data rate, and thus requires far less data reduction.

While Dolby's AC-3 encoding system—the heart of their process—is able to be upgraded to use more bits and, at least theoretically, provide better sound, Dolby has to this point refused to push for a higher data rate on carriers capable of it. HDTV, which apparently will use the Dolby system for multichannel broadcast, doesn't have the space for a higher audio bit-rate; but laserdiscs and CDs do. If Dolby and Pioneer feel that, for marketing reasons, they must use the analog track space for the 5.1-channel information, why not at least use the space on both analog tracks and give us a higher data rate? And what does Dolby have in mind for possible CD multichannel applications? Music videos? Stock quotations? To use 384kb/second for the music carrier and discard the remaining 1mb/second storage capability? They surely don't envision a 4½-hour music CD. Commercially, that would be a non-starter.

I'd like to see all of these systems use the current laserdisc digital track, with its generous supply of available data storage space. A single all-purpose-base or multi-function-based decoder could then recognize, by means of an appropriate flag in the digital code, which system is recorded on the disc, and then switch to the appropriate decoding scheme (or, in the case of a normal two-channel disc, revert to Pro Logic).

Each system could use as much of the available data space as it needed—and let the market decide which system is best. But this would be impossible with Dolby's and Pioneer's current plan to use the space now occupied by one of the analog tracks—a plan which, incidentally, will require the consumer to purchase a new laserdisc player in order to retrieve the 5.1 discrete tracks. Dolby's proposal would also eliminate any chance of using a higher data rate than their proposed 384kb/second, and would simultaneously freeze out the competing systems—unless the latter could convince software vendors to use their system on the laserdisc's digital audio tracks. Two different systems—one storing the 5.1 channels on the analog track space, the other on the digital—is a recipe for commercial chaos, and could hopelessly confuse the consumer and kill off all discrete multichannel systems—and perhaps even the laserdisc format itself.

The Home Theater concept may well owe its very existence to Dolby and Pioneer. Dolby for developing the film stereo format, which reinvigorated interest in quality film sound in the '70s; and Pioneer for sticking by the laserdisc format through unprofitable times. And there's no denying Dolby's head start with its proposed 5.1-channel Dolby Surround Digital system. No one (except potential competitors, of course) is saying that Dolby's system may not be the best option available.

The concern being expressed in many quarters, including in Stereophile, is that we just don't know, and we want to be certain that the High End has at least some say in the standard ultimately chosen. "Trust us" is not a comforting alternative. How many years did it take for CD software and hardware to become acceptable to the High End? And many still cling to analog. At present, we may well be steamrolled into a 5.1-channel system that the critical consumer finds sonically unacceptable. But, unlike CD, the im-
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The UK is the toughest, riskiest, most irrational market of all.

This is nothing new, but it was interesting hearing it from a peculiarly British manufacturer who gives the impression that UK sales alone are enough to keep him in profit. If pressed, he admits that Hong Kong, Italy, and Singapore are the territories that really matter to his company; but he doesn’t ignore the UK, nor does he cater specifically to foreign tastes. The trend, however, is toward creating export-only products, and it’s growing. This manifests itself in a number of ways, the extremes being minor modifications of existing models at one end, and whole new product ranges at the other. In some cases, it appears that the company just can’t be bothered with the UK, which means that its export-only products are as alien to British hi-fi users as are foreign brands without distribution. I’m no longer surprised when I see companies like Lowther proudly exhibiting raw drive-units and enclosures at the Paris show, while its UK presence is a secret akin to the whereabouts of Jimmy Hoffa’s corpse. Matisse, makers of a rather exclusive tube preamp, exhibit at the Hong Kong high-end shows, and their preamps can be found in Hong Kong shops. UK activity? Negligible.

Sageden, once the brand for entry-level audiophile amps and a pioneer of class-A circuitry, seems happier serving its Italian clientele than its native market. The list goes on and on.

Just last month, Steven Tyler of Acoustic Energy dropped by and asked me to listen to the AE1 and AE2a Signature Series speakers—upscale versions of the familiar AE1 and AE2. I knew the minute he pulled them out of their cartons that they were destined for Korea, Singapore, Japan, and Hong Kong. How did I know? For starters, the finish was too gorgeous for words: hand-polished lacquer over some rare veneer, a breathing-taking knotty brier that would have looked nice surrounding the dials in a Bentley’s dashboard. There was also a hallmarked, sterling–silver nameplate bearing the serial number (I was reminded of Harbeth’s export-only deluxe version of the LS3/5a I saw a few years back in Hong Kong). These details alone reminded me that no tightfisted Brit would pay extra for mere aesthetic gains.

But there was more to the Signature Series than the beautification program—more than enough to justify a price doubling and a weight increase from 18 to 25kg for the AE1, and to 45kg for the AE2. All of the components in the crossovers have been upgraded, all of the wiring is pure silver, the drive-units are matched to zero tolerances, and the cabinets have been reinforced. But these are still “luxury” touches, which foreign markets appreciate and with which the British no longer comprehend.

But it’s not only high-end exotica which the more clever British makers send abroad. Anthony Michaelson of Musical Fidelity has long recognized the need to serve each market with its own unique models—provided the market can justify the bespoke models. And in the case of nearly every Asian territory, market size is rarely an issue. South Korea, for example, is a major growth area, and the official demand that all imported products bear front panels labeled in Korean doesn’t seem too much of a burden when you see the size of the orders.

In Musical Fidelity’s case, the “specials” range from simple cosmetic refinements to the creation of entirely new models. Germany and certain Asian markets, for example, buy a lot of chrome-fronted hardware—you can’t give that stuff away in the UK. Some countries cherish numbered editions or, literally, signatures etched on the front panels. Musical Fidelity has produced all of these—they’re able to do so because the company’s setup is ideal for small production runs.

So prominent is Hong Kong that Musical Fidelity had no qualms whatsoever about producing not just one or two new models, but a whole range exclusively for that market. The A500, for example, finished in black-gloss with gold lettering, is a half-powered version of the A1000 integrated amplifier, which Musi-
cal Fidelity sells all over the world. The A1000, though, is massive and costs serious money. The A500 brings down the size, the power rating, and the price; I think the unit is aimed at the entry-level consumer in Hong Kong.

But the Electra models sold in Hong Kong have little in common with the Electra models sold elsewhere. Exclusive to that market are a preamp, a power amp, and two integrated amplifiers, all sporting gorgeous pale metallic blue, curved front panels—probably “too good” for the British. The irony is that the Electra export specials are actually inexpensive enough to be viable in the UK, but Michaelson has had his fill of homegrown aggravation. Because Of this, the British are missing out on a sub—$1500, fully balanced pre-/power amp combination with three-figure wattage and looks that could kill.

Just as telling as their willingness to support export markets with unique products is the way British manufacturers support foreign hi-fi shows. They’re always well-represented at Top Audio in Milan, at the Paris show, at Stereophile’s Shows, and in Frankfurt and Berlin—wherever there’s a gathering of brands. And however grim, low-key, and reduced-in-size was that last Chicago CES, the British were there in force with Mission, KEF, Celestion, Meridian, Creek, Epos, Townshend, Arcam, Monitor Audio, Rogers, Harbeth, ProAc, Wharfedale, and probably a few others launching new products.

Then again, they didn’t have the World Cup to distract them.

US: Peter W. Mitchell
The economic relationship between the US and Japan passed a historic milestone this summer, when the exchange value of the dollar fell below “par” (one cent equals one yen—the, one dollar equals 100 yen). Fifteen years ago, when I traveled to Japan at regular intervals to learn about new hi-fi designs, an American dollar bought nearly 200 yen. As I write this in July, a dollar is worth only 98 yen.

In principle, this means that American consumers must pay twice as many dollars for Japanese goods as they would have had the exchange rate remained constant. Meanwhile, Japanese consumers need pay only half as many yen to buy imported American products. Some consequences of this change are well-known: Japanese automobiles, which used to be cheaper than their American counterparts, have become much more expensive, while high-end audio products from American companies have become more competitive in Japanese audio salons. Many high-end manufacturers who used to sell only to American customers now make half their sales in export markets. Manufacturers who have not attempted to sell their products overseas are missing a good bet: despite the restrictive importing agreements and complex paperwork that make it difficult to sell to some countries, American high-end products are now in great demand overseas.

Manufacturers Who Have Not Attempted to Sell Their Products Overseas Are Missing a Good Bet.

Large Japanese manufacturers have responded in several ways to the rising cost of their products in the US market. Some are avoiding the yen/dollar exchange problem by moving their factories to the US. For several years, most

Sony Trinitron TVs have been made in San Diego, while Honda automobiles have been assembled in Ohio. Other firms have transferred production to countries with third-world economics and low-cost labor—Korea, Mexico, Taiwan, Singapore, and mainland China. (Check the fine print on the back of many “Japanese” products to discover where they’re really made.) A few of the larger Japanese hi-fi manufacturers have employed a further tactic: They’ve continued exporting to the US, but have reduced prices, sacrificing profit margins and sometimes even selling at a loss in order to maintain market share. These companies include Sony (the largest supplier of CD players), Matsushita (Technics/Panasonic), Sanyo, and Sharp.

Pioneer tried that approach, but couldn’t continue sustaining losses, and so ended up narrowing their product focus. In the past, Pioneer was tied with Bose as the top-selling brand of loudspeakers in the US market, but Bose now stands alone at the top of the mainstream mid-fi speaker business. Pioneer might have been forced entirely out of the US if it hadn’t correctly forecasted the rapid growth of Home Theater—where Pioneer’s laserdisc players and A/V receivers have led the market. Similarly, Yamaha’s continuing ability to compete in hi-fi has

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been subsidized in part by the popularity of its keyboard synthesizers. Other companies have been forced out of the US high-end market (Toshiba, Hitachi, Akai), or have had to accept a shrunken market share (Aiwa, Luxman, Accuphase, JVC, Kenwood, Sansui).

Some high-end Japanese companies that play significant roles in Asian markets aren’t attempting to export to the US at all, because their products would be outrageously expensive here in dollars. For mass-market consumers, the declining dollar has had a beneficial effect: as the big companies compete for market share, they’ve been selling products at or below cost ($160 VCRs and $99 CD players). And for American high-end manufacturers, the declining dollar has increased the value of their exports, causing US designers to become stronger players in the world market. But for American audiophiles, the declining dollar is a drawback, keeping potentially interesting products out of the US market and driving up the cost of the products that remain here.

US: John Atkinson
Barry Kohan, of Bright Star Audio, is trying to start an audio club, the West Valley Audio Society, in West San Fernando Valley, California. Contact Barry Kohan at (818) 225-1341.

US: Peter W. Mitchell
You’re probably familiar with the idea of using fiberoptic cables, fitted with either TosLink or AT&T ST connectors, for conveying digital signals from a CD transport to a separate D/A processor. But a new company, ASM Labs of Mari-onville, Ohio, has found another way to use fiberoptic cables: to carry linear audio and video signals.

Some advantages are immediately obvious: optical cables pick up no hum or noise, no ultrasonic or radio-frequency interference, and no electromagnetic crosstalk between cables; they don’t conduct any AC power-line noise from one electronics chassis to another, don’t produce ground loops, and there’s no top-octave rolloff due to an output impedance interacting with cable capacitance; there’s no concern about copper impurities, or diode effects between metal crystals and adjacent wire strands, no subtle dielectric effects, no skin effect, no need for Teflon insulation or silver conductors.

If optical cables are so good, then why aren’t they widespread? Because an audio or video signal exists as a modulated voltage or current. To transmit it via optical cable, the voltage or current must somehow modulate a light beam; and at the receiving end, the modulated light beam must be converted back to a varying voltage or current. In the past, most optical modulators have been so non-linear in their behavior that they couldn’t carry an analog audio or video signal without adding a lot of noise and distortion. These problems are unimportant with digital signals, where the waveform is simply modulated on and off at high speed; so optical cables are widely used for digital. (Even the TosLink connection does a fine job of transmitting the digital ones and zeros. Its drawback is that it’s microphonic: if the cable is vibrated by the sound of your speakers, then the vibration may add timing jitter to the digital waveform; and in most D/A converters, digital jitter is decoded as intermodulation distortion in the analog waveform.)

What’s new about the optical cables from ASM Labs is that they rely on a “Mongoose” optical transmitter that modulates a laserbeam in a proprietary fashion claimed to provide linear operation over a 115dB dynamic range and a 30kHz bandwidth. Maximum input level is said to be 1.5V RMS—just slightly below the standard 2V maximum output of a CD player—and maximum transmission distance exceeds two miles. The company’s aim is to equal the sonic performance of the finest high-end cables while bypassing all of the familiar drawbacks of metal conductors. Of course, only a listening test will disclose whether a stereo pair of Mongoose optical transmitters and companion receivers will actually form a transparent audio link.

Canada:
Thomas J. Norton
Just prior to the recent CES in Chicago, JA and I paid a visit to Canada’s National Research Council in Ottawa. The NRC has become well-known in audiophile circles as the testing ground for a number of (primarily Canadian) loudspeaker manufacturers. It’s subsidized by the Canadian government, so small manufacturers who couldn’t otherwise afford to build their own facilities can use the NRC’s.

Audio research is only a small fraction of the NRC’s entire operation, which encompasses research and development work in many fields, both by government scientists and private industries. The fact that any audio loudspeaker R&D is going on there at all is attributable to Dr. Floyd Toole, formerly of the NRC and now with Harman International. Dr. Toole’s personal interest sparked the use of the NRC anechoic chamber—originally custom-built around 1960 for work on acoustic standards and the study of sound propagation—for loudspeaker research and design.

Hosted by PSB’s Paul Barton, who uses the NRC often, we toured the chamber and the rest of the audio-related facilities. There are two comfortable listening rooms—also built through the efforts of Floyd Toole for his research: one is an L-shaped space with a wall that can be moved to block off the el so that the room is more rectangular; the other room is rectangular, and is the prototype room on which the IEC listening-room recommendations were based. (Dr. Toole was on the committee that established those guidelines.) Absorbers and bass traps of various types have been installed in this room to optimize its characteristics.

In the L-shaped room, Paul Barton had set up a demonstration of an experiment he’s working on: using DSP to correct for the loudspeaker-room response. A consortium of Canadian loudspeaker manufacturers, including PSB, is working on this technology in the hopes of developing a “smart” loudspeaker that will adapt to its environment. This ongoing effort, called the Athena Project (a similar project, Eureka, is being conducted in Europe), was initiated by Dr. Toole when he was with the NRC. We were able to compare the sound before and after DSP correction through a pair of PSB Stratus Gold loudspeakers. The differences were small yet audible; the only question in my mind was whether or not the improvement: cost ratio will justify commercial applications. Paul emphasized that this was just a technology demonstration, however; the project is still very much in the research stage.

We left favorably impressed by the

2 In an unfortunate policy change, the Canadian government decided that non-Canadian manufacturers must apply in advance to use the facilities, have their proposal approved by a committee, and await the committee’s decision on how much they will be charged. Canadian manufacturers don’t have to go through this, and the cost to them is quite low. This is probably only fair, since Canadians do support the operation with their taxes, but it effectively squares our US manufacturers who can’t afford to go through red tape every time they need to make a few measurements. Snell Acoustics, for example, which at one time used the NRC, no longer does so.

3 This room was originally used for sleep experiments—exposing a subject to various sounds during sleep and analyzing the results—and was pressed into service as a listening room because the sleep experiments required reasonable acoustic performance.
Hear the music, not the machine.

Has listening to music recorded on CD's become an uninspired routine instead of the releasing experience it once was? Maybe it's because you're hearing more of your digital playback machinery and less of the music. In an era when most CD players and transports offer the same bland assembly-line sonic experience, Audio Research is proud to announce two new products which serve the music instead of digitally enslave it.

The CDT1 compact disc transport and the CD1 compact disc player both use innovative engineering—along with patented Audio Research circuits—to bring you higher resolution from the compact disc medium than you've ever encountered before. This new standard of performance is due in part to more effective mechanical isolation and electronic elimination of digital jitter—the electronic entropy that drags on laser servos, error-correction circuitry and power supplies to hold back the full reproduction of a life-like musical experience. (Hence the flat, dimension-less sound of much previous CD sound.)

Add Audio Research's advanced, highly regulated power supplies and, in the case of the CD1, an innovative analog stage with low-impedance output drive, and you have two machines which honestly advance the state of the art in music reproduction from CD sources.

Both transport and player offer a full complement of digital output options, including ST-standard glass optical, BNC-coaxial, AES-EBU (XLR) and TOSLINK. The CD1 also includes analog outputs for both balanced (XLR) and single-ended (phono plug) connection to your preamp. In short, both CDT1 and CD1 are equipped for easy incorporation into any music reproduction system. And both include remote control standard.

So, the choice is yours. For superb performance with any outboard digital-to-analog processor, it's the CDT1 compact disc transport. For all-round musicality in a single chassis (with the option of later use as a transport), it's the CD1 compact disc player.

Some audio critics have said that digitally encoded music has finally come of age. We say it's been reborn. Experience it soon at your nearest authorized Audio Research retail specialist.
Japan: Jack English

The May 1994 issue of Stereophile (Vol.17 No.5) featured a cover photograph of Denon’s DP-S1 CD transport and DA-S1 D/A processor. In his glowing review, Tom Norton praised the jewel-like build quality, gorgeous appearance, and wonderful sonic performance of these two S-series components. TJN postulated that today’s top CD playback, such as that provided by the DP-S1/DA-S1 combination, might well be found in tomorrow’s more affordable digital equipment. What a prophet, he!

Having bypassed the Summer CES, Denon invited the press to its US home in Parsippany, New Jersey to unveil a host of new products. Most notable was the DCD-S1 CD player, slated for November delivery and retailing for $5000. The DCD-S1, in a single box, incorporates most of the higher-priced separates’ features, including the DP-S1’s top-loading design, motor-drive system, and disc stabilizer, and the DA-S1’s four 20-bit DACs and ALPHa (Adaptive Line Pattern Harmonized Algorithm) system.

In the regular line-up of new products, Denon introduced the DCD-3000 CD player, expected to be shipped this month at a retail price of $1200. It, too, incorporates the DP-S1’s center-mounted transport design, and the DA-S1’s four 20-bit DACs and ALPHa system. Denon also showed the DCD-1015 ($500), which, in addition to drawing on the S-series technology, offers digital pitch control—for the musicians among us.

Cementing its resolve to again become a high-end player, Denon introduced a number of new S-series products: Joining the DP-S1, DA-S1, and the POA-S1 monoblock amplifiers are the DCD-S1 CD player and the $17,000, two-chassis PRA-S1 stereo preamplifier. This last feature fully balanced, discrete circuitry and advanced MOSFET devices. At a more affordable level, a new S10 series of components was introduced, including: the DCD-S10 CD player ($1500), which incorporates the ALPHa system and four 20-bit DACs; the PRA-S10 preamplifier ($1100), with balanced input and output circuitry along with Ultra High Current MOS-regulated power supplies; and the POA-S10 monoblock power amplifiers ($1100), rated at 150W into 8 ohms.

Tackling the ever-growing AV-receiver market, Denon hopes to carve itself a unique niche by emphasizing the sonic superiority of its products. Most important in this campaign is Denon’s new Dynamic Discrete Surround Circuitry (DDSC). Rather than using a single integrated circuit chip, Denon has broken the processing down to be handled by separate optimized circuits: The left-, center-, and right-front channels are processed in their original analog format. The surround signals are converted to digital via an 18-bit Delta-Sigma converter prior to being processed in physically separate DSP circuits intended to minimize total harmonic distortion while maximizing dynamic range, channel separation, and noise isolation. A separate, 18-bit, ladder-type DAC is then used to minimize quantization noise and zero-cross distortion. Both DDSC and Denon’s RDS SmartRadio are featured in the $1000 AVR-2500 and the $750 AVR-1500 surround-sound receivers; the $900 AVC-2800 surround amplifier features only DDSC.

US: Peter W. Mitchell

Here are three brief follow-ups to reports in recent issues:

1) In July (Vol.17 No.7), I reported that Fuller Sound in L.A. was selling recordable CD-R blanks for about $22—half the lowest available price of a year earlier. But even before the July issue was printed, the price dropped further—to just $15. To order, call (800) 88-SOUND.

2) I also mentioned in July a mastering studio in North Hollywood that made a pair of CD-R discs for me. The studio, CD Labs, is co-owned and operated by Fred Tushinsky. Long-time audio hobbyists may recall that the Tushinsky brothers put Sony on the American hi-fi map by importing the first transistor-based Sony tape recorders in the late ’50s. During the ’60s and ’70s they imported many other audio products from Japan under the Superscope and Marantz brand names. CD Labs is a twin of the Sony START studio in Tokyo—one of the first facilities to do CD pre-mastering directly on CD-R disc rather than via U-Matic video tape.

The traditional method of mastering a CD is to use a Sony PCM-1610 or 1630 processor to encode the master recording on a ¼" U-Matic videocassette. The tape is shipped to a disc-mastering studio where the digital codes are used to form a pattern of pits in a coating on a glass master disc, from which stampers are duplicated and are used to mold the CDs we buy. Engineers have noticed that the U-Matic recording may introduce subtle changes in the sound, and that ten-year-old U-Matic tapes have become unplayable because of high error rates.

Some studios prefer the computer-based Exabyte tape drive, which was developed for mastering CD-ROMs and can also be used for audio. But the broadest trend is to abandon tape altogether and go directly to disc-based mastering systems, which are expected to prove more reliable for archival storage as well as more faithful in preserving sound quality. The high end of this trend (in both quality and cost) is represented by Sony’s PCM-9000 magnetooptical disc recorder. A less costly method, which is growing rapidly in popularity, involves pre-mastering on CD-R disc; the gold disc is shipped to the pressing plant, where it’s replicated to produce a glass master and stampers. Another low-cost alternative is the Firetrak system from Del Mar Avionics in Irvine, CA.
A DISCRETE PROPOSITION

Ten years ago the CD promised "perfect sound...forever."

But something vital was missing for those with an ear for the discreet.

Call it sonic character. Or audio integrity. But the embedded nuances that breathe brilliance and vividness into a recording were lost simply because data could not be accurately decoded and played back.

Until now.

Introducing the DS Pro Generation V digital processor from Theta Digital.

The Generation V is the progeny of years of Theta research and evolution, surpassing not only our proprietary standards for high-quality digital playback, but also those of competitors which sell for thousands of dollars more.

Featuring an all-new, fully-discrete, analog section with its large open-loop bandwidth, current feedback configuration the Gen V has ultra-fast slew rates and extremely low peak error and settling times. And the class-A design produces the smoothest waveform transitions possible, eliminating subtle crossover distortion.

All of which means digital playback has finally come of age.

We propose that you spend a quiet moment with a DS Pro Generation V. You're in for the most fulfilling CD listening experience to be heard anywhere.

THETA DIGITAL. DIGITAL DONE RIGHT.
This uses a laser to encode the pit pattern on a polymer disc rather than a glass master; after being metalized, the disc is replicated to form stampers.

While these approaches avoid the potential drawbacks of U-Matic tape, and may preserve the sound more accurately, their greatest benefit could be their tendency to reduce costs and democratize the process of creating CDs. Nowadays any audiophile or freelance recording engineer can produce an edited master recording on a DAT tape. This can be transferred to CD-R disc at low cost for low-volume production, and either the DAT or the CD-R can be used at most CD factories to mass-produce finished CDs by the thousands. It's no accident that new record labels are springing up every day.

3) Last March (Vol.17 No.3, p.46) I described the wonderful Acoustic Research hi-fi demonstration rooms in Boston and New York, which stimulated a great deal of interest in high-quality audio during the 1960s. Good recordings were played all day long, every day, through good audio systems in quiet rooms. In order to expose people to the beauty of honestly reproduced music without the pressure of a selling environment, no sales were ever permitted. I suggested that the Academy for the Advancement of High End Audio set up similar public demonstrations—to show the public how much pleasure a high-end sound system can provide.

I don't know whether the AAHEA is going to do anything about this idea, but somebody else is: the Walt Disney company. During the Chicago CES, Disney invited selected members of the hi-fi press to a special showing of The Lion King, and to a luncheon that included a revolting press conference in which company executives moved from table to table for individual discussions with writers. I enjoyed chatting with Roy E. Disney, Walt's nephew, about his impressive revival and expansion of the company's animation division (which other Disney executives had been willing to abandon in favor of live-action movies). But the main point of the event was "Innovations," a new section of the EPCOT exhibit adjacent to Walt Disney World near Orlando, Florida.

Innovations, combining innovation and invention, opens this month. It's a group of revolving exhibits that feature new developments in technology—either new state-of-the-art products or new designs that will make the transition from R&D labs to the consumer market in the near future. The content of the exhibits will evolve at frequent intervals in order to remain at the forward boundary between developing technologies and the consumer market.

Innovations will resemble a visit to the Sharper Image catalog store, the COMDEX computer show, CES exhibits, and the Stereophile High-End Hi-Fi Show—all combined in one place. The first year's exhibits will include opportunities to experience virtual reality, smart-house home automation, HDTV, advanced computer software, the information superhighway, interactive TV, CD-ROM libraries, et al. Two Innovations exhibits are particularly relevant to this magazine's focus: high-end audio and Home Theater.

These realms are familiar to you and me, but most people have never experienced either the thrilling involvement of a big-screen, five-channel Home Theater system, or the remarkable musical realism of high-end audio playback. People simply have no idea of how much pleasure these experiences can provide. They might find out if they spend some time in the showrooms of a good high-end dealer or a Home Theater installer, but most people have no strong motivation to do so. Even if tempted or curious, they're often intimidated by their expectation of annoying sales pressure, or of guilt at wasting a salesperson's time when they have no expectation of buying anything.

People need a threshold experience—an opportunity to learn, to be amazed, and to experience delight without being deterred by intimidation or guilt—an experience that will motivate them to visit a dealer. That teaching and motivating function was served in the '60s by the AR demonstration rooms, and will be served now by Innovations. Don't assume that the Disney connection means that the sound will be mass-market mid-fi. In fact, Disney's engineering staff includes many Stereophile readers, and one of the organizers of the high-end exhibit at Innovations cited Krell amplifiers and Apogee speakers in his list of product candidates. So if you know someone who's planning a trip to Orlando, Innovations may be worth a visit.

Innovations will only be a part of EPCOT in Florida; it will not be expanded to other Disney amusement parks. So I suggest again that the AAHEA expose people to high-end sound in other places—either by cloning the old AR demonstration rooms, or by creating a mobile listening room in a trailer that could be moved from city to city. Perhaps the simplest, most cost-effective approach would simply be to sponsor "public listening days" at existing audio dealerships, where the public would be invited to enjoy music and learn about high-end audio with no selling pressure—perhaps in association with a related (but quiet) cultural event such as an author's book-signing tour or a wine-and-cheese tasting, organized in cooperation with a neighboring book-store or restaurant.

If we want high-end audio to find a larger public, manufacturers and dealers have got to sell people the experience. For example, if you're an audio dealer, do you advertise your store in the printed program of every acoustical concert (classical, jazz, folk) in your area, including the free concerts at colleges? If a community college offers free or low-cost evening courses, teach a course in "The Reproduction of Music" or "The Home Theater Experience," using as your textbook either Robert Harley's new book, The Complete Guide to High-End Audio, or Stereophile's forthcoming Guide to Home Theater. If the class can't be held in a store, the course should at least include showroom visits to demonstrate audio basics (in-phase vs out-of-phase wiring, surround-sound, et al), and the cost of tuition and books could be partially refundable as credit toward any major purchase. If the income from tuition doesn’t adequately compensate a store owner or salesperson to teach such a course, and additional pay is desired, seek sponsorship or a partial subsidy from manufacturers and the AAHEA.

And if your town has no community college through which such a course could be offered, create the course out of thin air and teach it at the store! Many potential customers are inhibited by their lack of knowledge; they would willingly come to your store if you advertised that you're not going to sell them anything—you're simply going to teach them how to buy and install a high-quality music system. Stress that the course is strictly non-commercial—absolutely no selling will be allowed during the classes. You can also eliminate guilt by charging a small tuition fee for the course—eg, the price of the Harley book (again, refundable later against any major purchase). Advertise the course at little or no cost via bulletin boards at supermarkets, senior-citizen centers, and schools, and by local radio.

Don't just wait in your stores hoping that people will come to you on their own initiative. We've got to teach people that high-end audio is not about ugly, expensive toys; it's about the joy and sadness and delight and exhilaration that music can provide.
WHEN SONIC FRONTIERS ENTERED THE FIELD OF DIGITAL PRODUCTS...

THE ULTRAJITTERBUG
The UltraJitterbug Digital Interface is an economical upgrade to an existing digital source and external digital processor. Utilizing the latest UltraAnalog Input Receiver, the UJB is intrinsically low in jitter, and rejects transport jitter. The UJB reClocks the digital data stream, feeding a "clean" signal to the digital processor. The result is a remarkable improvement in sonic performance.

THE SFD-1 DIGITAL PROCESSOR
The SFD-1 Digital Processor - much like its older sibling, the SFD-2 - implements the latest UltraAnalog Input Receiver and DAC module. These modules offer, without a doubt, the finest sound and performance in digital-to-analog conversion on the market. To eliminate the
"glare" and "leaness" associated with op amp analog output stage designs, the SFD-1 utilizes two 6922 tubes in a cathode follower configuration. The result is outstanding digital-to-analog conversion at an exceptional price of entry.

THE SFD-2 DIGITAL PROCESSOR
The SFD-2 Digital Processor is built to no compromise standards. Modular for non-obsolescence, the SFD-2 digital stage employs the latest UltraAnalog Input Receiver and two DACs for true balanced configuration. The sophisticated power supply contains three split bobbin transformers, high speed rectifiers, ultra-low impedance capacitors, highest quality cap shunts, and a combination of IC and discrete regulation. The result of these extraordinary design features is the critically acclaimed SFD-2 Digital Processor - a true breakthrough in the digital audio domain.

Sonic Frontier's digital line provides unmatched value to today's audiophile consumer. All three products offer uncompromising craftsmanship, exceptional parts quality, a full five-year parts and labor warranty and one year on the tubes. Call, fax or write for more information on these or other products. The Sonic Frontiers UltraJitterbug, SFD-1 and SFD-2 Digital Processors - three bright additions to the field of digital audio.
Mitchell Froom says that, at the end of the day, if the record's good, he's having a good time. If that's the case, then he and his partner, engineer Tchad Blake, have been having a ball lately. Over the past couple of years, Froom and Blake have worked on a bunch of albums in "Records To Die For" territory: Richard Thompson's two most recent releases, Rumor and Sigh and Mirror Blue, and Los Lobos' groundbreaking Kiko. More recently, the boothmeisters have taken a tentative step into the spotlight with the remarkable Latin Playboys album (reviewed in this issue), on which they collaborated with David Hidalgo and Louie Perez of Los Lobos.

Allen St. John recently had a conversation with Froom that touched on topics from cookie-cutter keyboards to digital reverbs, from Elvis Costello and the Attractions to PJ Harvey, and from Froom's low-profile partner to his own job description.

Allen St. John: You and Tchad Blake have been on a real winning streak the last couple of years. Have you changed your approach?
Mitchell Froom: Starting with [Los Lobos' Kiko], we came onto some new techniques, and just a revitalized attitude that enabled us to get much more extreme with each recording. The sound has gotten more radical, and I've been able to get the arrangements more radical. These things work hand in hand.

St. John: How did you and Tchad hook up?
Froom: I'd been having problems with engineers, personally and aesthetically. I didn't find anybody I was happy just to hang out with—or anyone who was wild aesthetically. The environment in the studio is very important, and if someone is basically conservative in their taste, that's going to have a really bad impact on a recording. Tchad is definitely more of a radical thinker.

St. John: Being a producer is one of those jobs that's difficult to explain to a six-year-old. So what do you do?
Froom: The job is radically different according to each project, and I don't know how a six-year-old would understand it. [pause] I'm a keyboard player and an arranger, and sometimes what's required is that I really get into the structure of songs and rearrange them. So sometimes the job is to figure out an unusual way to define the groove in a song, which may not be a really obvious thing. If it's a solo artist, it's getting the right musicians. If it's a band, then you have to go in and find the weaknesses in the band and work on those. You find your role within the process.

St. John: How is it different working with a band compared to working with a solo artist, and which do you prefer?
Froom: I like both. The ideal is if it's an incredible band like Los Lobos or the Attractions—bands where each musician has really got their own style and the way it fits together is even better. That kind of thing you can't manufacture. And if you get a band at the moment where they're really coming on to their style—like with Crowded House on their second album, Los Lobos on Kiko—that kind of thing is really exciting.

On the other hand, if you work with a solo artist, the backing to what they're singing can be almost anything you can imagine, as long as it fits the mood of the song. It can be a much bigger job to conceive of those things.

St. John: You play keyboards on a lot of your projects. How does that change your perspective?
Froom: I really enjoy playing on record. I have a large assortment of odd keyboard instruments. In general, there are a very few keyboard players I like, and a big part of that is the instruments they have—you can't get a good sound out of them. I think with the Attractions was one of the rare times I didn't want to play at all, because Steve Nieve was great.

He's got his own really wild style, and he gets really cool sound on his instruments. On the other hand, I love to play. I think that's the moment when I'm the happiest.

St. John: What's been your favorite keyboard toy recently?
Froom: On this new record I'm working on [Ron Sexsmith], I've got this thing called a Hammond Novachord. It was made sometime in the '20s, and it's a really wild, weird, old sound. It's got 80 tubes in it—I think it was from the 1939 World's Fair. Nino Rota, I think, used it quite a bit on those old Fellini soundtracks. I used it on "Saint Behind the Glass" on Kiko—you only hear it during the fadeout. I've got an assortment of 40 or 50 different things, like a Baldwin electric harpsichord and Mellotrons and Chamberlins and those kinds of things—instruments that you plug in and they have a lot of character. On the new keyboards, you have this wide assortment of sounds, none of which are any good.

St. John: Do you like to work live, or do you tend to assemble records?
Froom: I like not feeling I have to do it one way or another. When you first start to produce records, you think you have to do it the way the big boys do it. You do the basic tracks, then you make sure the bass is right, then you start adding
the guitars. You assume that if you concentrate on each thing individually, it's going to be much better. I found, in general, that that's not the case. You can have a record where each individual tone sounds incredible, and the record will sound terrible.

St. John: The sound on some of your recent work, like Kiko and the Richard Thompson albums, seems so much cleaner than your earlier records.

Froom: It was just a matter of getting more confident. The newer recordings are technically much dirtier, there's much more distortion, but there's much less signal processing. You come to a point where you say, "I don't like the sound of these digital reverbs." I like reverb, say, on one instrument, and it sounds more reverberant compared to the dry things. Using discrete reverbs—where there'll be a certain reverb on one thing and another reverb on some other thing—the way all these reverbs are clashing with each other creates a godawful sound.

We try to get more out of less. That's the way my favorite records always were. A lot of people say, "Put one guitar part on. No, put another one on, and then maybe put one more, and it'll just be in the background, and every now and again it'll do kind of a cool thing." Well, every now and then it might do kind of a cool thing, but when it's not doing kind of a cool thing, it's ruining everything—it's eating up all this space.

St. John: Who are your favorite producers?

Froom: It's not a club I'm proud of being a member of. I think producers have a tendency to ruin records. There are exceptions. The people who make the best producers are people like Elvis Costello or a guy like Tom Waits—people who have real ideas.

St. John: What have you been listening to lately?

Froom: The new Beck record. I really like the spirit of the thing. It's not necessarily what I'd put on around the house. Mostly what I listen to is stuff outside the rock realm. I put on some Nino Rota-type things or jazz stations—anything else for ideas. I'm not that interested in grunge band after grunge band.

St. John: What kind of system do you have?

Froom: Mostly I listen on headphones. If I'm listening to mixes, my main references are these Sony headphones—99½, I think they are. In my house I have a pair of Vandersteen's. And I've got some Adcom stuff. I just asked somebody

I THINK PRODUCERS HAVE A TENDENCY TO RUIN RECORDS.
what they liked, and I listened to them.

St. John: Do you still listen to records?
Froom: I ended up getting rid of my turntable. Records are a funny thing. In a way I prefer the sound of LPs because there's something familiar about it. I was talking to David Hildago about that. He was really into CDs, and he went over to Cesar [Rosas'] house and he was playing records, and he found he could sit down and listen to a lot more music listening to records than to CDs. Is it that familiar sound when you set the needle down? Is it because you have to get up in between and turn the thing over and you're sitting there holding the album jacket? I think if a CD is really well mastered, I prefer it, because you can have more low end on things and it doesn't color the sound. And you don't have to worry about all the test pressings—all those things go out the window. On the other hand, there's something very cool about the way that records sound.

I played the stuff for Tchad and he reacted the same way. So I played the stuff for Warner Bros. and said, "Look, we got this thing, we don't know what it is. Maybe it's going to be demos for a Los Lobos record. We're not sure, but it's not going to take much." I knew that if we were going to approach it like some solo project, it would just fall apart, because there'd be too much pressure on it. We just donated our time, got a few days in the studio, and started messing around—adding vocals, doing little bits of ambience. It just became the album. My main job in that record was standing up for the demos and trying to convince someone to let us move ahead.

St. John: You've worked with Elvis Costello both solo and with the Attractions...
Froom: On Mighty Like a Rose, Elvis had just gotten a computer and made some demos which sounded fairly orchestrated. When we got in the studio we figured out that the

I GET CREDIT FOR A LOT OF THINGS ON KIKO THAT I REALLY DIDN'T DO.
Ten years ago Meridian gave music lovers the first high end CD Player. Since then, professional recordists and audiophiles have enjoyed the benefits of Meridian's digital technologies.

Meridian 618 Digital Mastering Processors with High Resolution Analog to Digital Converters allow 19.6 bit resolution information to be stored in the 16 bit format. Hundreds of recordings are now available using these technologies.

Only high resolution playback systems can enjoy this wealth of new musical information. Meridian High Definition CD Systems realize this with:

- High Definition Dual-differential Delta Sigma D/A converters
- Sophisticated 5th order noise shaping
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- Precision high output digital amplifiers
- Carbon and glass fiber non-magnetic disc clamping
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There is more music in your collection than you are hearing. Visit this musical experience at your Meridian dealer.
THE CLEAR WINNER.

The clear winner in terms of overall performance is the wonderfully satisfying Epos ES11.
It stands apart from the other loudspeakers auditioned blind,...

— Jack English, Stereophile
Vol. 16, No. 1 Jan. '93
in a ranked summary of 23 loudspeakers.
If you're setting up a THX or other home A/V theater system, where should you put the center speaker? The standard answer is that you place the center speaker on (or beneath) the TV screen. But what about its front/back positioning? Most magazine articles, and most Dolby-surround instruction manuals, specify that the three front speakers should form a straight line across the front of the room. After all, the three front speakers in a movie theater are installed that way, directly behind the screen. I believe that this placement is wrong for a Home Theater.

Imagine that your favorite listening chair is at the center of a circle. Your left and right speakers are 8'-9' away, at two locations along the circumference of that circle. You already know that, to produce a well-defined stereo image, the left and right speakers must be equidistant from your chair. When you set up the system, you used a string or tape measure to establish that each speaker was precisely at the same distance from your preferred listening location. (If you didn't, but relied solely on eyeball estimates, you probably aren't getting the soundstage you paid for. In order to deliver a well-focused center image and realistic layering in depth, the left and right speakers must be equidistant from your chair to within a fraction of an inch.)

ALIGNING THE LCR SPEAKERS IS AN EASY FIX, AND IT'S FREE.

If you place the center speaker on the line between your left and right speakers, it won't be on the circumference of that circle. Instead, it's on what your high-school geometry teacher called a "chord" across the circle. The result is that the center speaker is not at the same distance from your chair. It's closer to you, as your string or measuring tape will confirm. Consequently, the sound of the center speaker will arrive slightly earlier of the center sound. This distorts the stereo image, giving undue prominence to dialogue and other central sounds. That might be only a minor flaw with most TV programs, in which getting clear dialogue is more important than anything else. But in film soundtracks, it alters the crucial balance between dialogue and other sounds (including music).

With Dolby-encoded music recordings, early arrival of the center sound alters the apparent shape of the soundstage, projecting solo or other central sounds forward while weakening and pulling back the left/right edges of the stage. This perspective also tends to produce an impression that the central sound is a discrete monophonic image separate from the main stereo soundstage. The straight-line arrangement has another consequence: If the TV cabinet is aligned with the speakers, reflections of left/right sound off the TV tend to flatten the stereo soundstage.

By now the solution must be obvious. Get out that string or measuring tape, and move the center speaker back until it reaches the circumference of the circle, putting it at the same distance from your chair as the left and right speakers. Or, move the L/R speakers forward.

This is an easy fix, and it's free (my favorite adjective). But it really improves the realism of Pro Logic playback, re-integrating the central sound with the left/right soundstage and reducing the impression that the central solo or dialogue was recorded monophonically in an isolated closet. As a bonus, if the center speaker is sitting on top of the TV set, placing the TV cabinet a foot or so behind the left/right speakers may reduce the problem of reflections off the TV, and so improve the three-dimensionality of your basic stereo image.
Enough

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How quickly things change! In mid-June the picture of trade-show exhibitions seemed clear. The 1994 Summer Consumer Electronics Show in Chicago—the 50th CES, and traditionally the nation's premier showcase for new hi-fi and video equipment—was to be the final summer Show of its type. Future "summer" Shows would be held a month or two earlier in the spring, would be located in Philadelphia, and would have a new focus on interactive media. Nintendo signed a contract to be one of the largest exhibitors at the new Philly Show, to be called "CES Interactive '95." But even before the industry's final trip to Chicago, high-end audio manufacturers voted overwhelmingly not to participate in the Philly CES next year.1

1 As we go to press, the Philadelphia Show waters were muddled by the announcement of a Los Angeles Show to be held by the rival Interactive Digital Software Association the same May 11-13 '95 dates.

—Ja
It seemed clear that Stereophile's annual High-End Hi-Fi Show would succeed the Summer CES as the main spring/summer exhibition of high-fidelity audio and Home Theater systems. To make it easier for manufacturers to demonstrate their new designs to dealers and the press before the rooms were mobbed by consumers, a "trade" day is being added to the three "consumer" days of Stereophile's High-End Show in Los Angeles next April. East-coast consumers will have a second choice: in March, the Home Theater Industry Association is launching its first Consumer Entertainment Show at the Meadowlands Hilton in New Jersey.

The Winter CES in Las Vegas is taking over as the principal trade show for new audio and video products. High-end audio manufacturers have had a stable WCES home in the Sahara Hotel's motel-style bi-level annex. This location is far from ideal in acoustical terms, but exhibitors and the hotel have reached what seems like a reasonable accommodation to each other's needs. Parking is almost adequate now, the management was willing to move all the beds out (always a difficulty when hotel rooms are being converted to temporary hi-fi showrooms), and the AC power was beefed up to handle hundreds of current-hungry amplifiers.

The scene on the first day of SCES seemed to certify this vision of the future. The main part of CES—so shrunken that it occupied only one floor of the three-level McCormick Place—truly was a wake by the lake. Some people were referring to the slimmed-down Show as "CES Lite." Taxicabs were plentiful as drivers looked for CES customers but found few. The large mainstream manufacturers of TVs, VCRs, and other electronic entertainments, which have always dominated McCormick with their huge exhibits, were nowhere to be seen. The names so familiar to shoppers at Sears or Circuit City (RCA, G.E., Panasonic, Mitsubishi, Sharp, Toshiba, Pioneer, Yamaha, JVC, Sherwood, Aiwa, Akai, Goldstar, BASF, TDK, Koss) were absent, or present only in a small way. RCA, for example, was showing only its DBS satellite receivers.

For most of the Show I could have wandered up and down the exhibit aisles swinging a stick without fear of striking anyone. Fair-sized crowds could be found in the McCormick North building, home of computers and videogames; even so, the Show was a pale shadow of years past. And anyone who went in search of the mid-size hi-fi companies (Infinity, JBL, B&W, Tannoy)—traditionally housed across the street at the McCormick Inn hotel—was in for a rude shock. The audio exhibits weren't the only things missing—so was the hotel. It had been demolished, and the framework for a new and larger structure was rising over the gaping hole. The only audio exhibits were found in the Hilton—home of the High End. There, in striking contrast to the rest of CES, exhibitors were busy. The sheer volume of foot traffic was smaller than at previous Shows, but its quality was high. In terms of meeting dealers and showing new products to the press, many exhibitors found the Show to be a remarkable success.

The result is the first unexpected development: Because of the surprising success of the high-end portion of the dying Summer CES, there's talk of perhaps staging a follow-on Show in June 1995 that would feature only high-end and Home Theater exhibits at the Chicago Hilton. This might be organized under CES auspices, although the main part of CES will already have taken place in Philly. Perhaps the Summer CES, rather than changing its identity, will simply fragment into several smaller, specialized Shows.

For example, 12V car stereo used to be a major part of the Summer CES. This was convenient, since many companies produce amplifiers and speakers for both home and car. Last year, the car exhibits withdrew from CES in favor of a separate Mobile Electronics Show, which took place this year in Atlanta. Next year, the MES will be in Philadelphia—in the same convention hall the CES will be held in, but separated in time by a couple of weeks. MES and CES might converge again into a single Show; but if there's also going to be a CES Specialty Audio and Home Theater Show in Chicago, specialized Shows may be the way of the future.

The second unexpected development concerns the Winter CES in Las Vegas: After 1995, high-end audio exhibitors will have to find a new home. It is rumored that the...
The Proceed PAV answered the dreams of many for a single control center that could do it all: music and movies, at the touch of a button. Having solved that problem, the next question is obvious. Which power amplifiers will convey the musical realism of the PAV to the loudspeakers?

**Dual Monaural or Triple Monaural?**
The AMP 2 and AMP 3 power amplifiers complement the PAV sonically and aesthetically. As found in the finest high end power amplifiers, each channel in either the two-channel or the three-channel configuration operates from its own dedicated power supply. Engineered by the Madrigal design team, the combination of power, finesse and realism found in these amplifiers is remarkable.

**Upgrading Your System**
Many people prefer to upgrade their existing stereo systems one or two components at a time. If you have a fine stereo power amplifier you wish to keep for your main left and right speakers, an AMP 3 can handle center and surrounds in a single chassis. Better yet, use the AMP 3 for the three front channels and retire your stereo amp to the surrounds. Later, you might consider adding an AMP 2 for your subwoofers, or to drive the remote zone of the PAV. With sonically identical two and three channel amplifiers available, any system configuration is easily accommodated.

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WorldRadioHistory
Sahara Hotel plans to demolish its bi-level annex and construct a new high-rise tower in its place. Things change...

Meanwhile, a reminder for industry readers who reside south of the border: The first CES in Mexico City is scheduled for October 4-6 at the Palacio de los Desportes. Over 100 companies will be showing new products — stimulated by the rapidly growing trade in both directions between the US and Latin American countries.

**Steven Stone on Tube Electronics**

The Morgue on Michigan Avenue (this year’s Summer CES) was dimly lit by the orange glow of tubes. Unfortunately, they weren’t terribly bright, but they’re not supposed to be dazzling at a wake. To liven things up a bit, I arrived with my Sony D Athman D-7, loaded with recordings of the Boulder Philharmonic’s 1993 season and an unedited E-Town show featuring Richard Thompson and Sarah McLachlan — tapes with dynamics wide enough to wake up the dead and fry all but the most stalwart systems. I’m not the sort of guy who brings whoopie-cushions to...
When it comes to tube designs, it's hard to find completely new things circuit-wise.

mortuary chapels, but I made an exception for this particular memorial service—fireworks, anyone? Chicago afforded me room after room of cager victims just begging to be subjected to my torture tapes. I love my job.

Before I dive into hardware whos, what's, and wheres, I've got to mention a bit of literary vaporware that came my way: Frank Morris, President of Gold Aero, just signed a contract to write what may turn out to be the most definitive tome on tubes and tube electronics since The RCA Tube Manual. His literary foray will include the history of every "modern" tube made since 1945, a specification chart for each tube, a list of all possible substitutions, and a survey of classic circuits that employed each tube. I'm hoping that his book will contain the sort of factual information that might bring a new era of high performance and reliability to modern tube designs.

On the subject of reliability, Frank shared a little-known piece of info with me (after more than a few drinks one evening). For several years, Gold Aero has offered a unique service to its OEM customers: a one-year, no-questions-asked, blanket replacement policy for manufacturers who send Gold Aero a sample of their product for testing, and whose product passes Gold Aero's circuit-reliability tube-life testing. To date, only 12 manufacturers have bothered to have Gold Aero test their gear, and only three designs have been reliable enough to receive their guarantee. Fireworks, anyone?

When it comes to tube designs, it's hard to find completely new things circuit-wise, but novelties do occasionally pop up like morsels during the spring rainy season. Designer Jean-Jacques Van Leeuwen of Audio Matiere of Grenade, France, showed several pieces of gear that have a new French twist. First was the $3750 Majuscule integrated amp: featuring both EL34 and EL84 output tubes, it has 30Wpc of class-A power. At low power, only the EL84 tubes are in-circuit; but as power requirements increase, the amplifier section brings in the EL34s. This is fascinating, because the amp maintains class-A triode operation throughout. Audio Matiere's White Paper, while not going into great technical detail, does contain some rather poetic sections. For example: "Imagine a big tube valve controlling a smaller valve (the cut-off, of course), which will open and merge them together at high sound levels, so that they behave as one big valve, an imaginary big triode!" My, my—sounds like an X-rated Jean Luc Godard film.

Audio Matiere also showed two 52Wpc tube amps: the Equilibre ($7290) and the $40 Atmosphere ($7800). Both use four KT88s and four EL34s for power tubes, and four 6SN7gts with two EF86s on the input circuits. Two preamps were also on display: the Paraphrase ($4250) and the A1 Atmosphere ($6300), both of which have tube complements of two ECC83s, two 6DJ8s, two EL84s, and two EZ80s.

Another European tube product of interest was lurking in the Encore Electronics room. Driving a pair of Brentworth Soundlabs (of Groton, NY) model 3s—a very unusual speaker that features two 6¼" rice-paper drivers and absolutely no crossover—was a 15W triode push-pull monoblock from Art Audio of Nottingham, England. This diminutive critter was designed by Tom Willis and features a pair of EL34 output tubes on a compact chassis. It effortlessly drove the 102dB-at-1W-sensitive Brentworths to near-deafening levels.

Victor Tiscareno, AudioPrism's director of engineering, unveiled the Mantissa-series phono and line-level preamplifiers—each priced at $2500—in the May Audio room. Each piece sports stylish cabinets with gently curved tops. The line-level preamp supplies 10dB of gain with one 6DJ8 and one 12AU7 per channel, and six line-level inputs with one tape loop. The phono preamplifier delivers 60dB of gain with one 6DJ8 on the MC circuit, one 6DJ8 in the second gainstage, and one 12AU7 as a line-driver per channel. Both units are class-A designs, have FET-regulated power supplies, and are specified to have better than 90dB S/N ratios. Mated with a Roksan digital front-end and AudioPrism's Debut stereo tube amp driving a pair of $895 Totem Acoustics Rokk speakers, they formed a nice small-room system. David Chesky was so impressed with the sound that he came back to the May

3 Actually, the Venetian festival was held on Saturday night on Lake Michigan. Fireworks exploded outside the Blackstone Hotel at about midnight. Or so I was told—I slept through it all. Good earplugs are gifts from God. —SS

4 This stands for Original Equipment Manufacturer—it, I make the product for you, you put your name on it, I don't tell anyone if you don't want me to. —SS
“Nothing less than a steal.”
—Robert Harley, *Stereophile*

There’s something in this review of our GDA-600 digital-to-analog converter that the competition doesn’t want you to see. Maybe it’s the fact that the GDA-600 makes digital formats sound richer and more musical. Or that it has advanced 20 bit conversion architecture and a Class “A” analog output stage. But what they really don’t want you to see is that the GDA-600 costs much less than you might expect. For the full review see *Stereophile*, Volume 17, No. 3, (March ’94). Or, if your copy has been stolen, give us a call.
Audio room several times during the Show to demo a CD-R of his new releases.

Melos shared a room with Spectrum Audio and Spectrum's new HD-series speakers. George Bischoff unveiled a new version of Melos's very-well-regarded SHA-1 headphone/line-level preamp: the SHA-Gold, which features a (Mark) Porzilli Pho-tentiometer (patent pending), a new pot design that has only one resistor in-series, and one variable heavy-metal resistor—a light-sensitive photoresistor—going to ground. Porzilli's potentiometer design results in no moving parts in the resistor circuit. The front-panel volume control actually varies the amount of light transmitted to the photo circuit inside. The faceplate also has a meter that lets you see what's happening channel–balance–wise.

The SHA-Gold has a remote control that adjusts volume, channel balance, and mute. With six inputs, a tape-monitor circuit, one headphone jack, and the option of balanced input and output, the SHA-Gold is a full-featured preamp that would fit well into a high-value audio/video surround-sound system. It sells for $1800 single-ended, $2000 balanced. Delivery is promised for the end of August. Can I have one?

The Merlin room had the Joule Electra LA-100 preamp fronting a system with the new Merlin VSM speakers driven alternately by the Celeste W-4070 and the Ayre Acoustics

STEVEN STONE'S BESTS-OF-SHOW

Best expensive new speakers: Vandersteen 5, Thiel CS-7.

Best mid-priced speakers: Merlin VSM, Snell C-V, Paragon Regent.

Best low-priced speaker: Totem Acoustics' Rokk.

Heaviest product: Max Townshend's Sir Galahad speaker (over 600 lbs).

Best Home Theater demos: Marantz system adjusted by Joe Kane, and EAD/Rowland/Audio Power Industries/Martin-Logan room featuring Captain Video's W-VHS high-definition video from JVC.

Best new analog product: A tie between Creek Audio's $179 MM phono-stage preamp and Audio Alchemy's $199 MC phono-stage preamp.

Best new analog release: Michael Ruff's Speaking in Melodies on 180-gram vinyl from Sheffield Lab.

Oddest-looking new speaker that still sounded good: Concentric Technologies' monitor and super-bass monitor with "Pig in a Blanket" leather-covered concentric-circle cabinets.

Oddest-looking speaker that almost didn't work: The Churchill speaker in the ART room.

Most unusual new accessory: Nothing. Thank God.

Best successful product revision: Melos SHA-Gold.

Best golden glow: VAC's display (most tubes operating in one room).

Least number of review samples released to audio journalists: Classic Records. Their policy: You want it, you buy it.

Best new demo tapes heard: Chesky Records future releases, including Sibelius's Symphony 2 performed by Sir John Barbirolli and the Royal Philharmonic.

Best party: Stereophile's, of course.

Perfect for listening to Soundgarden. CG will be in hog heaven. —SS
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The best solid-state device at the Show was the Blackout Radar Jammer, a combined radar jammer/detector marketed by Global Marketing Associates (Tel: (800) 590-7770). In their demonstration, Global simulated a cop nailing innocent speeders on the highway by hitting a tuning fork and holding it up in front of a radar gun. A readout of "50" (mph) appeared on the radar gun's screen. Then they held the gun and the tuning fork in front of the Blackout and repeated the test. The screen was blank—a literal blackout. Wonderful. The Blackout looks like a normal radar detector and operates on the X & K radar bands which constitute better than 95% of the police radar in use. When you hear the detector go off, you have plenty of time to decelerate while the cop ponders the quirks in the radar.

Just imagine: You're late for an audio-club meeting, a CES, or the Kentucky Derby, and your foot's getting a little heavy on the gas pedal. Purely understandable and completely innocent, I assure you. Nevertheless, you're likely to pick up one of those pesky little tickets you get when you drive in the forgivable 5-10mph-over range. Well, the Blackout just assists the police in concentrating on drivers who are more deserving of tickets than you.

The company took pains to point out that, because this is a passive device and doesn't transmit a signal, it's legal under paragraph 15 of FCC regulations. Retail outlets, prices, etc. are being arranged, but unless your hearing sensitivity encompasses the radar bands, I'd give these folks a call.

Now for audio.

Audio Alchemy's marketing approach puts me in touch with my youth—when I was near-broke and spent hours studying hi-fi catalogs in lieu of the real thing, craving good sound that cost next to nothing. This company manufactures a series of inexpensive components ranging from digital processors to analog amplifying stages with which you can build a respectable system for little money—and do it incrementally. They showed the Overture OM150 power amp (150Wpc at 8 ohms), which will retail for $995; with an extra PSU150M power supply ($295), it can be converted to a dual-monaural design. The OM150 has a dual-differential, fully complementary signal path from input to output with low negative feedback. It sounded real good on a pair of Dahlquist Prelude speakers.

AA also showed the startling new VAC-in-the-Box phono-stage ($259), which has internal adjustments for impedance, capacitance, and gain. The RIAA curve is accomplished by passive and op-amp devices, and DC offset is controlled by a servo system—to get large capacitors out of the signal path. Quality polystyrene and polypropylene caps are used elsewhere as necessary.

Finally, the Digital Line Controller preamp, which was introduced at the '94 WCES in Las Vegas, was back with a new microprocessor: an Intel 87-C-51 replacing the earlier version's Z80. At $399, it offers from -96dB of attenuation to +32dB of gain. It's digitally controlled and adjusted with the Remote Wand, but has no digital processing in the signal path. Inputs (four), volume, and balance can all be adjusted in small increments from your listening chair and displayed on a large digital display on the chassis. Very nifty. The DLC.

---

6 Vandersteen was using Audio Research electronics with their new model 5, as was ProAc with their new model 3.5.
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having returned from SCES, I picked up some kind of lung infection and spent several days flat on my back. Obsessing over my Show report, I fell into reveries in which headline fever—fueled by the real thing—had me wandering gimlet-eyed through the endless halls of convention hell as I desperately sought new and exciting speakers. (JA: Do I get overtime for that? [No.—Ed.])

The real SCES bore little resemblance to my nightmare, however. Far from endless, it was the smallest within memory—and maybe the last one in the Windy City. The people who did go were there to have a great Show. I was impressed with how good most of the exhibits sounded; and I don’t know how the other guys fared, but almost every room I poked my head into seemed to contain a new or noteworthy pair of speakers.

Good as the general standards were, a few rooms really stood out. Snell Acoustics wins my “100% Hi-Fi/0% Filler” award for the introduction of their model C-V ($2500). These big speakers seemed modestly priced, given the engaging, swinging, natural sound they were producing. Word has it that Corey Greenberg couldn’t make them whimper, either. Driven by McCormack gear, this was one of the systems I kept returning to whenever burnout threatened.

My “This Chair is Mine” award goes to the Valve Amplification Company/Scientific Fidelity room, where Sci-Fi’s Crown Joule ($1590) monitor and Substrate ($4800) woofer were making involving music, driven by VAC’s amazing Renaissance 70/70 triode amplifier. Detailed, deep, and rhythmically assured, this system caught my fancy. In fact, as people approached my seat in the sweet spot, I tightened my hands on the arms and screamed, “It’s mine! All mine! Buah-hah-hah!” (Uttered, of course, with the dignity befitting a professional.)

Foreign manufacturers come to CESes looking for US distributors. Thomas Sillesen of Denmark’s Densen Audio Technologies did a good job of selling his solid-state line, which is marketed here by Sonic Integrity (Tel: (310) 944-0160). The DM-20 preamp has an internal demagnetizer that’s activated with each turn-on cycle, and features surface-mount technology and a power supply large enough for a small power amp. (Surface-mount devices are smaller than normal parts and allow a much shorter signal path, with increased thermal stability.) A moving-magnet phono-stage is available as an optional plug-in module for $200. A moving-coil version—solar-powered for the lowest possible noise floor—is on the way.

The Densen DM-30 power amp ($2000) is a dual-monaural 100W design on a single chassis with zero global feedback. The sound was very good through a pair of Audio Vector Model 6 speakers—with the usual caveat that what you’re mostly auditioning in these hotel rooms are the speaker/room interfaces.

Bob Carver has left the company that bears his name to form The Zeus Project? At SCES Carver showed its Lightstar amplifier and Zeus showed its Sunfire amp. Hmmm! According to Bob, the two products are “conceptually the same,” but added that his original Lightstar design may have been modified to one degree or another by the Carver design team. [A Carver spokesperson told me that, apart from some preliminary work, the Lightstar is not a Bob Carver design.—Ed.] Side-by-side comparison of the two products, both rated at 300Wpc into 8 ohms, would be mighty interesting. The Lightstar retails for $3500; the Sunfire’s price hasn’t been set yet. Both were played through Carver Amazing Loudspeakers which have bass, treble, and midrange adjustments on the back, so there was really no way to judge the sound. Reports of gunfire in the hallways of the Hilton proved unfounded.

7 “The Zeus Project” is only temporary nomenclature. The company is holding a competition to choose a permanent name.

—JA

WES PHILLIPS ON SPEAKERS

HAVING RETURNED from SCES, I PICKED UP SOME KIND of lung infection and spent several days flat on my back. Obsessing over my Show report, I fell into reveries in which headline fever—fueled by the real thing—had me wandering gimlet-eyed through the endless halls of convention hell as I desperately sought new and exciting speakers. (JA: Do I get overtime for that? [No.—Ed.])

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All speaker prices are per pair. —JA

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Stereophile, September 1994
"The Face Seems Familiar" award goes to Acoustic Research for the reintroduction of their classic and beloved AR3a—sort of. International Jensen now owns the AR marque, and has decided that reviving one of the most respected speakers of all time makes sense. The AR 303 ($1200) goes lower than the original (32Hz vs 39Hz), and delivers a lot more high-end energy (20kHz vs 4.5kHz). These also survived Corey's torture test. Lots of sock, but with plenty of detail and finesse.

Acoustic Research's revival of the classic AR 3a, the AR 303, costs $1200/pair.

"Rookie of the Year" award—for the most impressive new product by a new company—must go to Paragon for their Regent ($2800). Slim and elegant, this slot-loaded, simulated point-source two-way design had a lot of swing, detail in proportion to the music, and a pleasant sense of body. A company to look out for and a speaker worth listening to.

A special W.C. Fields "Don't Let the Posey Fool Ya" trophy goes to Monitor Audio for the Studio 2 Compact Monitor ($1200). These diminutive two-ways, with gold tweeter and aluminum mid/woofers, were astounding. I settled in for a long listening session and chuckled as people subtly scoped the room for a subwoofer. Balanced, authoritative, and cuter than the dickens.

Audio Influx is the hands-down winner for "Coolest Demo Music." Wandering the halls before the Show opened Saturday morning, I heard norteno accordion blasting down the corridor. Following the party noises, I came upon Michael Zeugin rocking out to Flaco Jimenez's Partners (Warners CD 26822-2). What Flaco and Dwight Yoakam do to "Carmelita" just sends chills down my spine, and the system that captured all of the excitement consisted of Arcam's insanely underpriced Alpha 5 integrated amp ($399) and new Alpha 1 CD player ($599), and Ruark's Sabre loudspeakers ($899).

A hell of a lot of music for the money.

For industrial design, the "Meet the Jetsons" award goes to the Misch Rondo AF2-42—a pair of wooden globes sitting atop truncated pyramids. Although they looked as if designed by Hanna-Barbera, they're beautifully constructed of laminated hardwood, and sounded pretty impressive. A US price has not been established.

Esoteric Audio deserves some kind of recognition for producing natural sound, but I'll be damned if I know what to call it. Skulking in the halls before the Show officially opened, I heard someone playing the Muddy Waters, Folk Singer CD. Only it didn't sound like the CD—it sounded like Muddy and Buddy Guy playing in one of the hotel rooms. It walked me up the hall like dragging a pork chop in front of a puppy. The $3000 Alianta loudspeakers from Italy, driven by Threshold electronics, were responsible. They nailed me to the sweet spot until the disc was over—I'm not even sure if anyone else was in the room. Check these guys out.

A very special, but non-CES, "No Limits/No Boundaries" award goes to Wilson Audio Specialties for their WATT/Puppy 5 ($15,000), which I heard at Audio Consultants' downtown showroom. Totally redesigned and benefiting from Wilson's R&D, their new WATTs/Puppies are the most dynamically natural speakers I've ever heard. I don't think anyone could drive these speakers to the point where they constrict the music. Just watch and see if "better than a WATT/Puppy" doesn't become the mantra of the late-'90s speaker manufacturer—in much the same way that "better than a Linn" was the mantra for turntable builders in the '80s.

Vandersteen introduced the long-anticipated Model 5 ($89000), which features a 400Wpc amplifier to control the down-firing subwoofers in each speaker. The subwoofers have adjustable Q and multi-band compensation, allowing you to tune them to your room. And they have veneer! These big boys really moved some air; but, more important, the natural way they reproduced my solo acoustic guitar disc showed grace and clarity.

Thiel also launched a big new speaker, the CS 7 ($8000). This four-way design depends extensively on new technologies, including a short-coil/long-gap 12" woofer (to keep the woofer under control even during extremely wide excursions), and a novel, coaxially mounted tweeter/midrange assembly. I wouldn't want to pass judgment solely on what I heard in a hotel room, but driven by Mark Levinson electronics, they exhibited a nimble, light, big-shouldered sound that showed promise.

ProAc's Response 3.5 ($7500) may not officially qualify as a new speaker, but since it has new drivers, a new crossover, and a bigger cabinet, I guess it isn't technically an upgrade.
Monitor Audio's commitment to quality reflects in this simple 2-way design. The MA 700 Gold MK II size gives no hint of the large and lifelike sound stage that it is capable of presenting. Monitor Audio's Gold Dome Tweeter technology coupled with Monitor's special compliant woofer with Nitrile surround, combine to accurately reproduce everything from the subtle nuances of classical guitar to the thunderous roar of Home Theater.
either. They sounded rich, full, and involving, and the room was consistently filled to capacity.

Brentworth Sound Lab was showing the Type Three ($6000)—a one-way design that runs two 6.5" drivers full-range, utilizing an unobtrusive outboard "bass contour module." The midrange was as luscious and liquid as I’ve ever heard, although I found the bottom end a trifle less than authoritative. With another room, or another system, perhaps they’d develop more slam.

Another company famous for “leaving out” the crossover is Epos, who demonstrated the ES25 ($3000). A three-way that uses proprietary drivers, this loudspeaker kicked sand all over the “polite British loudspeaker” stereotype. I’m talking real bass here! Tri-amped by Creek electronics, the ES25s had rhythm, fire, and a whole lot o’ soul.

Lamm Audio Laboratory was showing off their model M1.1 mono power amps by driving Purist Audio Design’s Quintessence Speaker System ($6000). The price on this monitor/woofer system includes an optimized room setup. The amps seemed quite impressive, and the speakers had spacious, detailed, relaxed sound.

Alison was showing a new line of shielded speakers that have apparently been designed for Home Theater crossover systems. They had a cool kind of “retro” look and sounded pretty good. I heard the PD8.3 ($1900), but they were also showing the larger PD12.4 ($2880).

I met Steven Stone in the halls; he was raving about the sound of the Spectrum Audio HD-2 ($1995). Driven by Melos electronics, they were very nice—full sound, with an unusually detailed soundstage. Another tough contender at the $2k price point.

There were only a couple really big speaker systems at this Show. One was Townsend Audio’s Sir Galahad ($30,000), which featured low coloration and astounding dynamic potential. The other was the Alon by Ararian Systems Phalanx ($20,000)—not new, but still sounding pretty thrilling.

Dahlquist showed not just a new speaker, but an innovative new line of speakers consisting of three monitors and two woofer/stands. The CA-1 ($600) is fairly standard, the CA-2 ($900) is a quasi-D’Appolito design, and the CA-3 ($1200) is a dynamic bipolar. All are designed so that the consumer can fill the internal walls with sand to add mass and rigidity. There are two different models of woofer/speaker support à la the Wilson Puppy: the DW-1 ($800) and the larger DW-2 ($1200). The sound was unusually coherent on the CA-1/DW-1 system that I heard. A modular system that offers great value, these speakers should be extremely hot.

No matter how hard I worked to give some coherence to the Show, it all ultimately blurred together into one room after another—filled with stereo. I’m running out of space.
here, and I still haven’t mentioned the impressive Amrita Audio Jovian Pillars ($2395), which sounded detailed and assured, or the Merlin VSM ($3500), which had swing and panache aplenty. For that matter, I haven’t even mentioned Dzurko Acoustics’ Shadow ($8200), which had a precise, expansive soundstage, but which seemed a tad aggressive from my nearfield listening spot. And how can I not have told you about the leather-bound loudspeakers from Concentric Speaker Technology? At $9000, this cylindrical four-piece system looked like gym equipment, but disappeared aurally. Perhaps there were a few problems integrating the elements, but nothing insurmountable, I’m sure—plus, your living room will have that lovely new-luxury-car aroma.

That’s for real, not the product of my fever. I must have missed some great stuff at the Show, and I can’t wait until they build some of the stuff I dreamed. But th-th-that’s all, folks!

Robert Harley on Digital

This was by far the smallest CES I’ve attended, but there were plenty of new digital products. In addition to unveiling entirely new designs, many manufacturers demonstrated production versions of units shown previously only as prototypes.

Theta Digital presented two new digital processors: the DS Pro Basic III and the DS Pro Progeny. The Basic III, which will sell for $2895, is an evolutionary development of the Basic and Basic II, both of which have earned rave reviews in these pages. The III uses software-based DSP filtering running on two Motorola DSP56001 chips, with four DACs and four analog output stages for truly balanced operation. AES/EBU input is standard, with ST-type optical and Theta’s LaserLinue offered as options. The Basic III also sports Theta’s new front-panel styling.

The Progeny represents Theta’s entry-level, software-based processor. Using a pair of Burr-Brown PCM67 hybrid DACs and one 56001 DSP chip running at 4x-oversampling, the Progeny will sell for $995. Under $1000 is a real price breakthrough for a DSP-based processor.

British manufacturer Arcam, who introduced one of the first outboard D/A converters in 1988, showed a forward-thinking digital processor called the Delta Black Box 500. The unit incorporates a D/A converter, multiple digital inputs, source switching, and digital-domain volume control with full remote control. The Delta Black Box 500 can be connected directly to a power amplifier, obviating the need for a preamp. The $1500 unit (US price) has a host of high-quality build features, and offers AES/EBU, gold-plated BNC, and gold-plated RCA jacks among its seven digital inputs. When used with Arcam’s transport, the processor sends a separate clock signal to the transport, eliminating the interface as a jitter source. Arcam’s other new digital product was the $599 Alpha One CD player, which uses the Burr-Brown PCM69 hybrid DAC.

Krell showed a line of innovative new products, one of which had been debuted at the Stereophile High-End Hi-Fi Show in Miami this past April. The line, called KPS for Krell Playback Systems, is an effort to offer performance close to that of Krell’s top-of-the-line products for a much lower price.

The KPS-20i is a CD transport and DSP-based digital processor in one chassis. At $9000, it reportedly approaches the sound quality of Krell’s DT-10 transport and Reference 6x processor (see my review in the January 1994 Stereophile, Vol.17 No.1). The KPS-20i adds a line-stage preamplifier, multiple digital inputs, and full remote control, bringing the price to $10,000. Finally, the KPS-20t is a stand-alone transport that will sell for $7900.

The Krell processors use the new Motorola DSP56002 chip—a more powerful version of the DSP56001 used in all previous Krell processors (and nearly all processors with custom digital filters). Because the chip runs at a screaming 66MHz, more sophisticated filter algorithms can be employed. In addition, the added horsepower means that one DSP can replace the four used in previous Krell processors. The KPS-20t transport features a dual suspension system on which rests a 1½-lb block of machined brass. The KPS line’s build quality and cosmetics are outstanding.

Remember when Audio Alchemy’s $399 Digital Decoding Engine set a new standard in low-priced DACs? And again, when the $199 D/A-in-the-Box hit? What’s next? A $99 digital-to-analog converter? That’s right. Although it wasn’t at the Show, AA told me about their “DACMAN” D/A converter, built into a pair of interconnects and which will possibly sell for $99. The DACMAN uses a new, 8-pin surface-mount DAC from Crystal Semiconductor that contains built-in CMOS output amplifiers. The unit is intended primarily as a replacement for the D/A converters found in laserdisc players.

On a more ambitious note, Audio Alchemy is now in full production of their Digital Transmission Interface Pro (DTI-Pro). The $1295 jitter-reduction device employs two PLLs with a claimed jitter cutoff frequency of a very low 5Hz. The DTI-Pro also offers “Resolution Enhancement” with the on-board quad DSP chip running at 50MHz. The technique, which I explained briefly in my April WCES report (Vol.17 No.4, p81), claims to provide near-20-bit resolution from 16-bit sources using an interpolation algorithm contained in the software. Actually, the DTI-Pro is more of a general-purpose DSP platform that happens to be running resolution enhancement in this iteration. Look for AA’s DSP-based room-correction system in the same chassis and circuit board next year. Finally, AA announced plans for a $495 version of the DTI-Pro that will provide jitter reduction without resolution enhancement.

Theta’s DS Pro Basic III incorporates much of the technology from the Generation III DS Pro.
SANUS SYSTEMS

COMPONENT FOUNDATIONS

When I reviewed the Sanus Systems CF45 Component Foundation equipment stand in Vol.14 No.11, p.184, my primary reservation was that I felt it was not sufficiently rigid to use with a turntable. Sanus subsequently addressed the rigidity issue by adding an additional front-to-back support. The company sent a four-shelf CF35 sample for a “Follow-Up,” the only model it had available at the time. The CF35 is shorter than the five-shelf CF45 and sells for $324 for the rack and shelves (trim kit optional).

Even allowing for the fact that a shorter rack is inherently more rigid than a taller one, I was definitely impressed by the newfound rigidity of the updated CF35. When placed with spikes on a concrete surface and loaded down to simulate normal use, it was less prone to “racking”—a torsional lack of rigidity—than any of the other equipment stands I evaluated in the November 1991 Stereophile, including the Archic Lead Balloon. It was also at least as rigid as the fully assembled, welded, Target TTST racks that I use in my listening room. (In fairness to the Targets, they’re 5” taller than the Sanus.)

Here are some other comparisons between the Sanus and Target stands:

1) The Sanus is wider and deeper (its usable dimensions are 20” W by 17.5” D, compared to the Target’s 18.5” W by 15.5” D), and will more easily accommodate larger components. The Sanus’s shelves are also thicker and heavier.
2) All the shelves on the Sanus are supported by spikes. Only the top shelf of the Target is spiked.
3) While there are more crossbraces with the Target, the steel frame of the Sanus appears to be made of thicker material.

4) Neither rack has provisions for filling it with sand, but the Sanus, with its heavier steel frame, seems slightly better damped.
5) The ready-assembled Target can be up and running in five minutes. The Sanus must be assembled, and while it is not complicated, it is a rather tedious procedure (it took me about two hours—your mileage may vary). One of the decorative trim pieces on our sample had misaligned holes, and Sanus had to send us another.

I can now definitely recommend the Sanus CF35 for general use as a solid, attractive, reasonably priced equipment stand. I have not tested the taller, improved CF45, so I can’t specifically recommend it. But it should be a simple matter for the reader to check its rigidity at a dealer.

—Thomas J. Norton

“Overall, however, the Sanus was the best-looking of the units under evaluation. In the more important functional area, the Sanus Rack comfortably accommodated anything we wished to place on it.”

“The CF45 is, however, the most suitable as the support for a full-up audio-video system (with two of the racks and the optional Video Bridge).”

—Thomas J. Norton

“Racking It Up”

Stereophile, Vol.14 No.11, November 1991

MANUFACTURERS’ COMMENTS

SANUS SYSTEMS

COMPONENT FOUNDATIONS

Editor:

We would like to thank Tom Norton for his follow-up review of Sanus Systems’ Component Foundations [in October 1993, Vol.16 No.10, p.245]. Component and loudspeaker supports do not get the attention they deserve, so it’s encouraging to see this product category reviewed. It is even more gratifying when the review focuses on a Sanus product and is extremely positive!

In the November 1991 review, Tom felt that Component Foundations were the best-looking of the equipment racks then under evaluation, and the most suitable as a support for a full-up audio-video system. The only real criticism that Tom had for the CF45 was ultimate rigidity.

As Tom noted in the “Follow-Up,” the latest Component Foundations are significantly more rigid. Rigidity and immunity to resonance are the two most important elements in component-rack performance. We are pleased that he places our latest models at the head of the class in these critical areas, as well as in functionality and aesthetic appeal.

Besides enhanced rigidity, there have been three other noteworthy changes since the last review. The height of the middle shelves now has a range of adjustment, two Video Bridges may now be used, and additional trim-kit finishes are available. The current list of trim-kit finishes includes: Black Lacquer, Midwestern Red Oak, Missouri Walnut, Grey Fountainhead, Rose Fountainhead, Sand Fountainhead, and Emerald Fountainhead.

The review did have one significant inaccuracy. It stated that Component Foundations were not designed to be filled with sand. Component Foundations may be filled with sand or shot. Curiously, this feature was correctly mentioned in the November 1991 review.

Jim Wohlford
Sanus Systems

©Stereophile—Vol. 16, No. 10
I'VE HEARD REMARKABLE DEMONSTRATIONS OF THE MERIDIAN DIGITAL THEATER BOTH AT THIS AND PREVIOUS CESes.

Furthering its thrust into surround-sound music and Home Theater, **Meridian** introduced its DSP6000 Center Channel loudspeaker. The new model is identical to the company's existing DSP6000 digital loudspeakers (see my review in Vol.14 No.9), but the head unit containing the midrange and tweeter drivers is slanted on both sides rather than one.

As with all of Meridian's surround demonstrations, no video monitor was used—only music sources. Bob Stuart wanted to emphasize that surround-sound, Home Theater, and high-quality music reproduction aren't mutually exclusive. Indeed, I've heard remarkable demonstrations of the Meridian Digital Theater both at this and previous CESes.

I heard an absolutely delicious sound in the **Encore/Art Audio/Brentworth Sound Lab** room. The new Encore Pyramid 1 digital processors and control amplifiers fed Art Audio's 15Wpc Quintet tubed monoblocks, which drove the crossover-less Brentworth Sound Lab Type III loudspeakers. The Pyramid 1 digital processors are housed in pyramidal-shaped enclosures, with a blue light at the top. (If you've ever seen the Luxor hotel in Las Vegas, you know what the Encore Pyramid processors look like.) Because the processors are remote-controlled and incorporate a preamplifier, they can be placed within inches of the power amplifiers. The Pyramids can be bought without the remote control and line module ($3500 single-ended, $4500 fully balanced), or with the controller ($13,000 single-ended, $16,500 fully balanced).

**PS Audio** announced some minor changes to their digital lineup; the Lambda transport now comes with AES/EBU standard, and features a redesigned power-supply board. The new retail price is $1795 with coax and AES/EBU, $2095 with ST-type optical output. PS Audio is also working on the Digital Link III, a complete rework of the popular Digital Link II. Projected retail price is $699.

Mike Creek was on hand to show a prototype of his new Creek CD42 CD player in Roy Hall's **Music Hall** room. The CD42 features a discrete current-to-voltage converter and a zero-feedback, class-A output stage. The DAC is the Burr-Brown PCM69 hybrid chip. The $1095 CD42 should be available later this fall.

A few Show reports ago (Vol.16 No.4) I told you about my experience listening to different filter chips in **Pink Triangle's** DaCapo digital processor. The unit has easily swappable filter modules, allowing the user to select the one that sounds best in his or her playback system. While I was visiting the Pink Triangle room, designer John Westlake told me of an exciting prospect for the DaCapo: as a test bed for the new High Definition Compatible Digital™ (HDCD) decoder chip which was expected to be available to manufacturers last month. Because the DaCapo has a plug-in filter module, it will likely be the first processor sold with an HDCD decoder. Moreover, it will be possible to compare the HDCD chip to a variety of other digital filters in the same processor. Watch for a full report on both the DaCapo and the long-awaited HDCD chip; I'm first on the list to get the HDCD-fitted DaCapo.

In other news from Pink Triangle, the company showed the $1600 Ordinal processor. The unit uses the new Philips 1307 chip, which has some advanced features, including switchable noise-shaping filters and selectable dither. The Ordinal can also function as a master clock when used with Pink Triangle's soon-to-be-released CD transport (delivery this month, with a projected price of $1395). The transport can be converted into a CD player by installing the D/A board from the Ordinal converter. As in the DaCapo, Pink Triangle has paid extreme attention to jitter reduction in the Ordinal, and equipped it with a serious power supply (including 19 regulation stages).

The small number of exhibitors allowed Robert Harley to take some time off to sign copies of his new book, The Complete Guide to High-End Audio, on the AAHEA stand.
MUSICAL TRUTH

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Marantz introduced the CD-63SE (for Special Edition) CD player to replace the highly regarded CD-63. The $499 unit has an upgraded power supply, oxygen-free copper wir-

ing, and copper shielding of critical components.

**Enlightened Audio Designs** (EAD) conducted the first demonstration of their TheaterMaster D/A converter, which includes integral surround-sound decoding. The D/A stage is similar to that used in EAD’s top-of-the-line DSP9000 processor. Surround decoding is implemented in the digital domain, and can be upgraded to accommodate the new 5.1–channel formats (Dolby’s AC-3 or the DTS system) when they become available. EAD’s demo was with conventional Dolby Pro Logic decoding. In addition, the TheaterMaster will incorporate the HDCD decoder chip. First shipments are scheduled for this month. The TheaterMaster will sell for $595.

A new line of power amplifiers, preamplifiers, and digital gear, called Oritron, is now imported by Stu Wein of SW Marketing. The Asian-made line of components includes the $995 HF-D2 digital processor, which uses a pair of the new Burr-Brown PCM1702 20-bit DACs.9 Coaxial, TosLink, and AES/EBU are standard; ST-type optical is an option. Oritron also showed the CD-F2 CD player ($1095), which also uses the 1702 DACs, along with a Philips CDM-12 transport mechanism. The CD-F2 is also available without the CD-F2T D/A converter for $895.

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**Thomas J. Norton on Accessories**

I left for Chicago not expecting much—after all, this was supposed to be the last CES to be held in Chicago. And when I glanced at the Show directory on the day before CES opened, I was not encouraged—there were only 60 rooms at the Hilton, headquarters of the High End. Unlike the last two years in Chicago, consumers were excluded from this CES; the Show was held later than last year so as not to conflict with the World Cup;10 and it was only three days long.

I began, as usual, by making a quick pass through McCormick Place—aka the “Zoo.” This hangout of the mass market has become less and less worthwhile in recent years; and this year, with the increasing emphasis on multimedia and video games, it promised little of interest in either audio or video. Seventy-five percent of the exhibit space was devoted to the Information Superhighway/video game arcade—the Nintendo booth alone looked like a theme park. The enthusiastic crowds reminded me of CESes of the late ‘70s, when audio was king. While video games may yet mark the end of Western civilization as we know it, attendees were too busy playing Sonic the Hedgehog and Video Zombie to ponder such portentous thoughts.

Electronic Game manufacturers are dedicated to bringing hints of virtual reality to the masses. How else can you explain the Aura Interactor—a backpack, designed to be used with a variety of games, which vibrates the torso with low fre-

quencies, according to a game’s requirements. Shades of the old audio Bone Phone. The only thing that actually appealed to me at the Zoo was a racing game from Life Fitness (Tel: (800) EXER-FUN) designed to interact with a stationary bicycle, making the latter a little less boring. Of course, one of Stereophile’s wags reminded me later that such a concept has been around for a long time—it’s called outdoor bicycling.

Outdoors was where I headed. After about 30 minutes of Zoo chaos, I made a panicked beeline for whatever audio solace I could find at the Hilton. With the notable exception of two or three ambitious Home Theater demonstrations, the rooms at the Hilton were audio-only. While new high-end loudspeakers from Thiel and Vandersteen stole the spotlight, there were plenty of others—although not enough to keep me busy for three full days. A few companies were outboarding, and for once there was plenty of time to see them all.

My assignment at this Show was to cover accessories, but new ones were definitely thin on the ground. Do headphones count? Stax has a stunning new pair of electrostatics; the Omegas. At $3000, which doesn’t include an amplifier, they’re designed to be driven by the Stax SRM- or SRA-series amps. They were incredibly comfortable, and their sound—in a brief audition—was luscious. I’ve been promised a pair for review.

A second set of headphones, this time from Sony and demonstrated at Sony’s North Michigan Avenue showcase store, was built with a different objective. Using signal processing, they’re intended to produce a binaural experience

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10 I still haven’t figured this out. There was a game in Chicago two days before CES began, and another the day after it ended (Sunday). I couldn’t go anywhere without falling over herds of excited soccer fans.

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**The Enthusiastic Information-Superhighway/Video-Game Crowds Reminded Me of CESes of the Late ’70s, When Audio Was King.**

Stereophile, September 1994

WorldRadioHistory
from stereo recordings. Unusually, they compensate for the movement of the wearer's head. They incorporate a gyroscopic reference that, once set, establishes the front-facing position of the 'phones. If you subsequently move your head, the sound source stays put—eg, turn your head to the right, and the sound then appears to be primarily at your left, and vice versa. The transition was smooth. It was a striking experience, but I couldn't help but wonder, why? Perhaps to appeal to those who are profoundly disturbed by the perspective of ordinary headphones.

The claimed binaural effect was not clearly demonstrated. Both the sound source (broadcast stereo TV) and the fact that the 'phones were being used in their wireless, infrared mode (they can also be used direct-wired) conspired against any serious assessment of their ultimate sound quality. The open-air design, however, made them, for me, rather uncomfortable and bass-tilt.

Esoteric Audio, which bought out Tiffany some time back, is coming out with a whole new line of Tiffany connectors and power-line conditioners to replace the models they inherited. No information yet on the conditioners, but their connectors appear to be similar in construction to Esoteric's own, high-quality designs, although they look different (nor do they resemble the earlier Tiffany designs).

Chesky has a new test CD: Best of Chesky Classics and Jazz and Audiophile Test CD, Volume 3. In addition to musical selections from the Chesky catalog, it has a brief burn-in track, tracks demonstrating microphone techniques, dynamic compression, natural and artificial space, Chesky's newest A/D technology, and more.

Two interesting accessories—the manufacturers of which were not present (other people were using the devices)—were Marigo's coupling caps and Microscan's amplifier stand. The latter damps amp vibrations in the manner of other Microscan devices, and was being used in the Lamm Audio Laboratories room. The coupling caps couple minimonitors to stands, and were being used by Musical Surroundings with Harbeth's LS5/12a loudspeakers.

Also aimed at vibration suppression was an extended line of Townshend Audio Scismic Sinks: priced from $349 to over $600, they come in two different sizes and a variety of weight capacities to handle loads weighing from 35 to 220 lbs.

I also discovered in the Musical Surroundings booth a catalog, from a company called The Elusive Disc, which offers 78 pages of listings of audiophile CDs and LPs—many no longer in production. Very good prices on most items, though many of their out-of-print LPs are very pricey. The champ, on a cursory look-through, appears to be the Mobile Fidelity UHQR Dark Side of the Moon at $975 (the standard Mobile Fidelity version goes for a paltry $150)! This is for new discs. Used LPs, which at the higher price points are said to go through considerable QC by TED, are also available (Tel: (317) 778-2715).

Threshold was at the Show, but were hiding in an upstairs suite. Following a change of ownership last year, this company has kept a rather low profile lately, but appears to be ready to challenge again with new products. No, they're not getting into accessories; but new owner Randy Patton showed me his new T400—a 150Wpc-at-8-ohms class-A stereo amp capable of 450W (over 250W of it in class-A) in its bridged, monoblock mode. A T500 version will be available later.

Everyone seems to agree that Chicago is a classier location for a CES than Las Vegas, though the latter has been, for some years now, by far the more complete, more interesting Show for the High End. As for me, I spent an extra day in Chicago visiting museums. But that same Sunday morning I learned that, on the previous day, the EIA (which organizes and runs the CESes) had offered to sponsor a High End audio/video "splinter" CES in Chicago next year, if sufficient support can be found. So the door's still open. We might be singing "I like Chicago in June" again after all.

11 Two incidents made me a bit less certain of this: the woman at the Bell Captain's desk at the Palmer House who was looking for a place to buy a rifle 'scope; and, as I was waiting for the airport van, the black schoolbus with "Chicago's Original Gangster Tour" tastefully emblazoned on the side.
New Directions...

From AudioQuest Music

MOKAVE
AFRIQUE

MOKAVE (Glen Moore, Larry Karush and Glen Velez) received worldwide praise for their first two releases on AudioQuest Music. Stereophile Magazine said of MOKAVE Vol. 2, "Clearly a contender for creative, improvised record of the year. A certifiable joy." With Afrique, MOKAVE'S group chemistry and compositional magic is at an absolute peak. AQ 1024

EDWARD SIMON GROUP
BEAUTY WITHIN

Edward Simon is best known as the pianist in Bobby Watson's poll-winning group, Horizon. He also has received recent accolades as a finalist in the prestigious '93 Thelonious Monk competition. Beauty Within is a showcase for Simon's unique compositional synthesis of Latin music and power jazz. Edward is joined by bass genius Anthony Jackson and the phenomenal new drummer from Cuba, Horacio "El Negro" Hernandez. AQ 1025

BRUCE KATZ BAND
TRANSFORMATION

The BRUCE KATZ BAND'S first release on AudioQuest Music was hailed as "a wildly energetic, exciting and enjoyable trip" by CD Review and "strictly a must buy" by Stereophile. Bruce Katz has virtuosic keyboard chops, but more importantly he's a true original with a powerfully appealing style. Transformation is a breakthrough statement by one of the best new bands in jazz. AQ 1026

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Here's the deal: If you're the kind of listener who must listen to your stereo at levels that change the barometric pressure of your listening room, or if you can't enjoy reggae concerts because they don't have enough bass, then the ProAc Response 1S (revised) is definitely not the speaker for you. Read no further. Move on. Scoot.

Anybody left? Good. Now we can talk about a very special little speaker. In a way, I didn't even want to review the 1S. I mentioned to JA that I'd heard them at my buddy Ruben's house and enjoyed them immensely, but I'd been using a pair of $13,000 speakers to review an exotic amplifier and had, sad to say, become quite spoiled: bass down to 28Hz, 93dB sensitivity, and some of the most accurate soundstaging I'd ever heard—we're talking about some serious suffering for my art, here.

So when the ProAcs arrived at my house, I thought it unfair: unfair to me (I was gonna miss them big dogs), and unfair to the Response 1S. After all, does anyone remember who played after the Beatles on the Ed Sullivan Show?

I should have stood by my first impression. After an evening spent filling speaker stands with sand, playing with room placement, and generally succumbing to Obsessive-Compulsive Disorder (the clinical designation that encompasses acute Audophilia nervosa), I settled down to listen to some Bach Trio Sonatas when my wife came home.

"Hey, these are great!" she enthused. "Because they're little and cute and have beautifully finished exotic cabinets?" I asked.

She favored me with that pitying expression that women reserve for other mothers' stupid, ugly children—or their own husbands—and replied, "Actually, I was referring to the fact that this really sounds like music. Those other things had really great sound."

"And what's wrong with that?"

"I don't listen to sound. The only reason I ever had a stereo before I met you was that sometimes I like to listen to music."

"That's the only reason I listen to this stuff."

"If that's your story, then, by all means, stick to it. But I know better." And she swept out of the room.

The maddening thing is that she was right. As much as I admired their predecessors, I loved the ProAcs! I blew up my TV. I stopped reading. My record cabinets disappeared behind mounds of unfixed LPs. The cats had to negotiate piles of CD cases that had milkweed growing on every flat surface. I went to bed late ("Just one more record, dear"), and shamelessly used the speakers as an excuse for shirking housework ("I'd love to, dear, but I've got a deadline"). Is this a great job, or what?

MODERN AUDIO: WHAT IS IT?
The first thing you'll notice about the Response 1S is that it's tiny. It barely covers the 6" by 9" top plate of the (necessary) 24"-high Target stands, and seems to be an extension of them—a handsome effect. The cabinets come in a variety of exotic wood veneers—ProAc's fit'n'finish standard is always exceptional. (Richard Gerberg, the importer, stresses that the wood is "responsibly farmed," which appears to mean that it's taken from plantations that replenish the trees, not strip-mined from rainforests.) Speaker connections are made via bi-wired pairs.
of five-way binding posts. Both the posts and the knurled tightening nuts are solid rhodium. The well-spaced binding posts accept even gigantic spade lugs, with (almost) enough room for even my large hands to power down the nuts. Rhodium jumper bars link the binding posts, permitting a single set of cables to drive the speakers. ProAc recommends bi-wiring, however, and I agree.

The 1S is a two-way design with a 3/4" cloth-dome tweeter and a startlingly clear 5" polypropylene woofer in a ported enclosure. Stewart Tyler has never been terribly forthcoming about technical details, such as crossover points—or even particulars, such as what type of crossover is employed. The spec sheet simply states that this speaker contains the “highest quality components as used on other Response models.” Nothing in my audition contradicted this claim.

Now a word on placement. The location of these speakers in your room will challenge your priorities, and force a tradeoff between openness and bottom. You can reinforce the bass response by placing the 1S near a boundary, but the speaker will sound thicker and slower for it. I put mine 5' into the room (measured from the rear of the cabinet), slightly toed-in. For those among us who care about this sort of thing, the backs are fully finished. Stands are not optional—not sonically. Don’t be cavalier about support with this speaker. Every change is audible—whether the stands are filled (damped) or unfilled, stable or rocking, level or not. Be anal about it.

DON’T LET THE POSEY FOOL YA

The Response 1S may look small, but the sound is open and full—it didn’t seem to be coming from those tiny boxes. I was listening at Ruben’s house one day, and we both burst out laughing—the apparent “body” of the speaker we were listening to was so preposterously at a variance with the size of these transducers. We were being a bit silly, yes, but I believe we audiophiles are often wisest in our silliness. (Unfortunately, the reverse is also true: We’re often silliest in our “wisdom.”)

I’m telling you nothing new—small speakers are known for their phenomenal imaging capabilities. What distinguishes the ProAc Response 1S, however, is the apparent physicality of that image. I’m not speaking here of the two-dimensional, photograph-like image we frequently accept as “real” in hi-fi. Rather, I’m referring to the sense that objects (singers, instruments) have bodies—a physical presence greater than just a series of tones. We can talk all we want about the reproduction of music as though music is some abstract idea—as well we should, for in one sense it is. But in listening to an LP or CD, we’re not experiencing music as a concept; we’re listening to a performance of music—a re-creation of an event that took place in time, which inhabits space, and which was produced by people or objects having a physical dimension. I think that we frequently confuse the map for the territory, concentrating exclusively on music as an abstract concept or, in contrast, focusing solely on its physical/spatial attributes.

There’s nothing theoretical, however, about the ProAc’s ability to present music in its physical dimension. You’ll revel in it, glory in it, get right down and swallow it. Leon Redbone’s Up a Lazy River CD (Private Music 01005-82095-2) is exceptionally well-recorded—chock-full of spatial cues and brimming with exactly the sort of earthy “body” that I’m talking about. “Gotta Shake That Thing,” a delicious piece of hokum constructed around Vince Giordano’s salacious-sounding bass sax, begins with two startlingly deep, juicy-sounding blats from Giordano. “Sounds stopped to me,” Redbone comments. “You better take it out and shake it.” “Shake that thing!” chants the band, and they’re off rolling through a “hot jazz” romp. The soundstage was full—string bass, dobro, piano, drums, and a horn section all clearly delineated around Redbone as he sang the double-entendre-filled verses.

When I say that the soundstage was full, I don’t just mean that the sound was spread from speaker to speaker. I mean that, as each instrument came in, it seemed to inhabit a location upon that stage—as in actually occupying an area commensurate with the volume of the sound. Bass sax, piano, and string bass were big, the singer and dobro less so, while the trumpet and clarinet were wimpy little thangs. I’m not claiming that this physical presence was life-sized. It was scaled-down—the way performers seem to be when you see them from the rear of the hall. While we see them as smaller, we don’t think of them as less real. This analogy is inherently inaccurate, however, in that the 1S didn’t distance me from the music. It presented an immediate, detailed simulacrum of the musical event.

This level of precision will not always appear a blessing. On multi-tracked recordings, there were times when two instruments appeared to inhabit the same position, thus destroying any illusion of reality. The Holly Cole Trio’s Don’t Smoke in Bed CD (Manhattan CDP 81198 2), which I find tonally and dynamically exciting, has been recorded in such a way that Cole’s voice seems to be coming from the same place as the piano. While listening through the 1Ses, I took this to be an indication of realistic spatial imaging as I assumed that Cole was playing the piano while singing. After buying my own copy of the CD, I discovered that Aaron Davis was accompanying her, now the effect detracts—as a minor annoyance—from my enjoyment of the disc.

While I found the Response 1S exemplary in its re-creation of the volume of musical instruments, it did not subvert the laws of physics. It couldn’t handle deep bass, and, I must confess, some of the midbass was also beyond it. The bodily kick that distinguishes truly large instruments is, of course, constrained by the nature of a 5" woofer in a small, ported enclosure. Big revelation. These guys will never satisfy you if you insist on having the visceral impact of an uncompromised bottom end. Sad to say, this is the coin of compromise that has been paid for neutrality elsewhere, but it’s a price that many of us are willing to pay for that neutrality.

Sporting a rare degree of uncolored coherence, the 1S makes virtues of the very factors that compromise its extreme low-end performance. Its small size and stout construction result in a very rigid cabinet. Cabinet resonance is one of the big aural signifiers that make canned music sound canned. The Response’s box resonance is by dint of size and bracing—moved up in frequency to the point where it no longer screams “box.” The resonance is still there somewhere, of course, but seemingly at a point where our ears are less sensitive to it. This is one of its secrets in sounding open—it doesn’t sound like a speaker.

Many small monitors that have sacrificed low-frequency reproduction to favor other areas of response tend to sound tonally unbalanced. In a sense they are, since they lack live music’s inherent equilibrium. But the greater problem is that most hi-fi speakers generate too damn much high-frequency information in the first place—or, rather, the quality of that information is not the same as that across the rest of the spectrum. This is so pervasive that tipped-up sound has become our reference. We even go so far as to praise this coloration as increased.

2 This woofer, along with some changes in the crossover, is what distinguishes the 1S (revised) from its predecessor. Richard Gerber explained that the driver is constructed of a polymer that mimics crystalline structure, making it unusually rigid without sacrificing the advantage of low mass.

3 I’m ignoring those recording forms, such as Space Music, for which none of this is true. I tend to do that a lot. It’s on purpose.
detail, and then go on to seek out even more of it. As Jack Sumner of Transparent Audio says, "Hi-Fi has become its own standard." If this goes on long enough, Fido will get more out of our systems than we do.

This is another area in which ProAc's design choices will be seen by some as justified and by others as wrongheaded. I hear the IS as open, detailed, and balanced. It doesn't have that etched hi-fi sound, but instead seems relaxed and natural. To those who have come to relish "detail," however, I imagine that it will sound dark and shut-down. I can't hear it for you, I can only describe how it sounds to me. Naturally, my conclusions are only valid if you subscribe to my value set, so take care. Like the bass question, the speaker's treble is a characteristic that you either accept or categorically reject. Is the top end more accurate than that of a "detailed" speaker? JA's charts will show you how it measures, but the chart can't hear it for you, either.

In building a speaker, just as in performing music, countless decisions must be made concerning balance. I have, for example, eight recordings of Ravel's Piano Concerto in G—there's an ineffable melancholy in the second movement that moves me powerfully—and they're all performed well. Yet, time and again I return to two of them:4 the choices made by the artists seem right to me—they affirm my understanding of the piece. The IS affirmed my musical values in the same way. This does not mean that others will respond similarly, any more than my appreciation of Michelangeli means that others will prefer him to Argerich.

**Music is feeling, not sound**

We speak of audio as sound reproduction. It is that, of course, but sound, while the medium through which music comes to us, is only one element of a musical performance. While we hear with our ears, we listen with our entire bodies. We react to music on a cellular level; it produces in us physical changes5 and emotional responses. While we speak of music as having meaning, that meaning is not necessarily tied to our comprehension, as it is the written word. Musicologist Deryck Cooke contrasted the way we process words and music by observing that "both awaken in the heart an emotional response; the difference is that a word awakens both an emotional response and a comprehension of its meaning, whereas a note, having no meaning, awakens only an emotional response."

Our emotional palette is directly stimulated by our participation in the experience of music. When I worked as an audio salesman, my employer would present customers with a conundrum to demonstrate that there is, in music, a quality more important than merely sounding good. "Suppose you were to take a recent Julliard performance graduate and give him a recital in Carnegie Hall on a $40,000 Steinway. He's obviously accomplished. He'd be capable of playing even complex pieces skillfully. But if you had to choose between him, in a great hall, on the best piano, and Maurizio Pollini playing a console spinet in a living-room, would you even have to think about it?" Call it nuance, call it soul. I call it grace.

Why? To begin with, The Shenton O.E.D. defines "grace" as "the part in which a beauty of a thing consists"—which sounds about right. In music, grace has a few longstanding connotations that apply as well. Grace notes are notes that are indicated by the composer as having no fixed time value. It is left to the discretion of the performer to "steal" the value of the grace note from the surrounding notes. This rhythmic flexibility is a carryover from an earlier meaning of grace, in which composers indicated areas into which ornamentation was to be inserted by the performer. Grace, then, is the part of music that is not written on the page.

Grace defines the distance between the piano student and the interpretive genius—the difference between the performance that is sublime and the one that merely gets the notes right. And that difference— is all the difference in the world—is made up of countless ongoing decisions governing phrasing, minute dynamic and rhythmic variations, elision, texture, and emphasis.

So, too, in audio. Getting the notes right is merely the first step. There are very few products that do not do that correctly. But venture beyond that, into the realm of grace—where rhythmic flexibility and dynamic shading demand nuanced subtlety—and the ranks thin dramatically.

This is not because audio designers are incompetent. On the whole, high-end designers have done astonishingly well at an impossible task. But there are so many parameters to design to, and each of us values every one of them to varying degrees. I would willingly sacrifice extreme loudness for a design that can non-ly portray the shadings of dynamics—say, the difference between soft and softer, or even loud and just a teensy bit louder. Confronted with a choice between deep bass and the supple agility to portray the ebb and flow of rhythm within a phrase, I'd go for the latter every time. Perhaps this accounts for my regard for the IS. Its balance of virtues and sins (the latter chiefly of omission) coincides precisely with my own ethos. Other listeners may, of course, hear things differently.

**How sweet the sound**

Seeking to challenge the ProAc at its métier, I played a recording that could almost serve as a primer for the qualities of rhythmic and dynamic graces: the Gershwin by Knight CD (Wilson Audio WCD-9231)—Hyperion Knight's mercurial performance of piano music by George Gershwin. Throughout the recording, Knight's control of the dynamic line is as compelling as his command of the melodic one. It complements, as well, his supple use of rhythmic inflection. The "Summertime" section of "Fantasy on Porgy and Bess" illustrates the interactions of these three elements, as well as the fact that few pieces are so simple as to have just one level of dynamic motion at a time. Throughout "Summertime," the melody is stated forcefully in the foreground, surrounded and supported by both choral underpinning and filigree, which do not inhabit the same dynamic plane as the theme. This contrast and interplay are what elevate the interpretation to poignancy, as opposed to mere prettiness. 

Rhapsody in Blue requires an abundance of grace—even in the fascinating piano reduction that Knight undertakes here—precisely because there's not much there there. Although an extended work, it doesn't really show any melodic or thematic development—at least not in the sense of possessing the inevitability of, say, a Beethoven symphony. A successful reading of Rhapsody survives on the charm with which the themes are presented—and, owing to its fragmented melodic structure, the rhythmic architecture that the performer constructs to support them. Mr. Knight forges a sustained arch of forward progression, to which he appends the many little discursive fillips that particularize this piece.

Need I mention that none of this would come across as compelling, or even interesting, if the ProAc didn't articulate every shading and nuance? Most speakers are capable of revealing the drive and ath-

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4 The Michelangeli/Gracis/Philharmonia LP (Angel S-35567) and the Katchen/Kertész/LSO LP (Linn Recut REC 01).

5 Among them are muscular responses (which resemble closely the ones involved in emotional states), dilution of pupils, and an increase in endorphin levels. Interestingly, Naloxone—an endorphin blocker—inhbits musical enjoyment.
leticism of Knight's playing. Those qualities would come across on a transistor radio. But what separates him from other young pianists with chops is how delicately he wields that velocity. Many speakers would mask his chromaticism in their driver inertia or box colorations. I have, in fact, played the disc on systems that trample the lithe rhythmic line and sit on the gossamer dynamic variation. It reminded me of the time, as a boy, when I shot a bird: what had been alive and soaring lay broken and muddy at my feet. It wasn't pretty.

**Beating against the bars of the cage of form**

In order for grace to exist, there must be a structure for it to play against. This can be something as simple as a sequence of notes or as complex as the sonata allegro form. Beecham once cautioned an orchestra against observing each measure as a unit unto itself. "Remember that the bars are only the boxes in which the music is packed."

One of grace's divine paradoxes is the infinite variety that it can invest in a form as tightly constrained as the blues. The standard blues form is AAB—i.e., a rhymed couplet in which the first line is repeated. Its standard rhythmic–harmonic structure is just as rigid: a 12-bar progression (I–I–I–IV–I–IV–I–IV–I–IV–I–I)' tied to the three-line couplet in three four-bar phrases. Nothing would seem more inimical to sublimity than a verse form one step away from doggerel, or a musical structure so tightly defined that to change any element in it is tantamount to changing its form. Yet the blues has produced a body of literature as linguistically and emotionally rich as Shakespeare or Twain, and a pantheon of artists capable of expressing the human condition in ways that transcend language or culture. Go figure.

Since the poetic and musical constraints are so tight, true artistry in the blues comes from the tension between its form and its expression. The finest performers anticipate—or lag behind—the phrase beginnings and endings. They treat the beat—the bar, even—as fluid: cramming more or fewer icti into each measure than anticipated, essentially expanding or compressing the unit itself. Each violation of the form validates its power. The genre derives its tension (and release) from this conflict within the form. Legions of performers have used these tools to forge art from experience.

None, for me, have surpassed the artistry of Muddy Waters.

The very qualities that distinguish Waters from an ordinary musician are the ones that so frequently get lost in musical reproduction. Like Billie Holiday, his vocal range is quite limited, yet his voice—through insinuatingly nuanced inflection and a playful rhythmic suppleness—is supremely expressive. Resolving this apparent contradiction taxes even the finest stereo components. Played through the 1S, Muddy Waters' *Folk Singer* (Mobile Fidelity UDCD 593, CD, and MFSL 1 201, LP) is a mitzvah (blessings on you, Mobile Fidelity!). Far and away, it's the best best–sounding CD that I've ever heard. It's also one of Waters' most subtle and evocative works. "Country Boy," a relaxed 12-bar blues, simply crackles with tension as the band tries to force open the box the music's packed in. Willie Dixon, on bass, nails down the bottom as he and drummer Clifton James define the measures. Buddy Guy's guitar rushes the beat ever so slightly, while Muddy's vocals lag behind. Waters' querulous slide seems to comment on the sung verses—sometimes answering, sometimes recapitulating them. But it's not disjointed; it hangs together—if only by its fingernails—because the structure holds. The interrelatedness of the parts—their organic connection—is not incidental. It's profound, yet subtle. Lose that subtlety, and you're left with banality. The Response 1S recovers all of the magic without (I can't help myself) muddying Muddy.

**Measurements from JA**

The Response 1S's B-weighted sensitivity was to spec at 85dB/Wm. Its impedance plot (fig.1) suggests that it will be relatively easy to drive, with a minimum magnitude of 5 ohms between 200 and 300Hz. Moving to the frequency domain, fig.2 shows the individual amplitude responses of the woofer, tweeter, and port. As suggested by the impedance plot, the port's bandpass peaks just above 70Hz, which coincides, as it should, with the minimum–motion point of the woofer. (At this frequency, the back pressure on the woofer cone is so great that it remains still, and all the speaker's output comes from the port.) The 1.5"–diameter port does have a big peak in its output at 820Hz, presumably due to a resonance of some kind. However, as the port is mounted on the speaker's rear panel, facing away from the listener, it's possible that its subjective effect will be minimal. Further up in frequency, the woofer has a noticeable step in its response just above 1kHz—before it crosses over to the tweeter around 4kHz. Its output drops rapidly above that frequency. The tweeter's response is pretty flat within its passband.

Fig.3 shows how these individual responses sum on the tweeter axis at a microphone distance of 45°. The balance is commendably flat, apart from the step and notch in the woofer's output between 1 and 2kHz. From my experience, aberrations like this tend to add a nasal character to a speaker's presentation. However, I note that WP didn't remark on any such coloration. In the bass, the speaker rolls off steeply below 80Hz, due to the woofer output being out of phase with the port below the latter's tuning frequency. The −6dB point is a high 66Hz; as WP writes above, that's the nature of a 5" woofer in a small, ported enclosure.

Laterally, as might be expected from the small cabinet, the Response 1S offers reasonably good dispersion (fig.4), though...

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6 This diagram, no matter how informative and correct, does not tell you how the blues sound. Just like specs.
the notch in the low treble deepens off-axis. The change in response is also a little more untidy on the side of the baffle away from the offset tweeter. The woofer’s dispersion can be seen to narrow somewhat in its top octave—more so than might be expected from its radiating diameter. Vertically (not shown), the speaker maintains its on-axis balance as long as the listener sits with his or her ears between the tweeter and the bottom of the woofer. Above that height, the treble gets more pronounced, with a large suckout eventually developing in the crossover region.

In the time domain, the ProAc’s step response (fig.5) reveals that, although the tweeter and woofer are connected with the same positive acoustic polarity, the speaker is not time-coherent, in that the woofer-output lags the tweeter by about 250µs. The irregularities in the woofer’s decay presumably correspond with the step in its output above 1kHz; I suspect it’s a surround problem rather than a cone-breakup mode.

The corresponding cumulative spectral-decay, or waterfall, plot (fig.6) does reveal some delayed energy in this region, as well as some low-level hash at the bottom of the tweeter’s passband. Overall, however, the initial decay is very clean—always a good sign. For comparison, fig.7 shows the waterfall plot of an earlier sample of the Response 1S (serial number P02293), which used the earlier woofer. Though the initial decay is still clean, this driver was hasher at the top of its passband, with a pronounced step at 5kHz.

Finally, using a simple accelerometer to examine the cabinet’s resonant behavior revealed one strong mode to exist, just above 400Hz (fig.8). This is high enough in frequency, however, that its subjective effect should be small.

All in all, a good set of measurements, apart from the woofer anomaly in the high midrange. Given the enthusiasm of WP’s comments, and my positive impressions during my own auditioning, it just goes to prove that any one measurement cannot be used to predict the
Say Amen, Somebody!
If I seem to have spent more time discussing music than describing the ProAc Response 1S, then it’s an accurate reflection of the time I spent listening to this very special speaker. Except during the initial break-in period (which took a long time), the ProAc did not draw attention to itself in any way. It was articulate—capable of distinguishing vanishingly small increments of metrical and dynamic variation. This also means that it was cruelly revealing of the character of the system feeding it, and must be carefully integrated into a system equally devoid of coloration.

I hasten to add, however, that I do not hold the 1S in such high esteem merely because it does so little wrong. I do respect that, but am far more impressed by its seeming desire—if I can indulge myself—to do right by the music. I have chosen to call this quality “grace” because, like the theological definition of grace (i.e., it is unearned), it is a gift.

Given its small footprint, the ProAc possesses a remarkably satisfying bottom end, but I must be careful to stress that “given.” Profound bass is beyond it, no matter how satisfying its balance may be. If you can live without the deeper tones and with reduced rump-rumble, then you should listen to this speaker very carefully. If not, you won’t be happy—no matter how much you like the rest of its capabilities.

Barring that cavil, there’s little to fault in ProAc’s Response 1S. At its price point, it faces some stiff competition from Thiel and Martin-Logan, to name only the most obvious contenders. When you’re spending this kind of money, there should be a variety of great speakers. Undoubtedly, a determined shopper will find other worthy designs to consider; naturally, I would advise you to listen carefully before committing to any of them. But whatever you decide to buy, you’re going to have an extremely difficult choice to make. Doesn’t that make you want to say grace? —Wes Phillips

John Atkinson

quality of a loudspeaker. Rather, what’s important is the balance between all the measured aspects of performance; ProAc designer Stewart Tyler appears to be a master at getting that balance right.

Stereophile, September 1994
Until just recently, only companies known primarily for their surround-sound processors were producing the most advanced—and most expensive—Home Theater products. No longer. It was inevitable that traditional high-end audio manufacturers would begin producing equipment for this fast-growing market.

In the May 1994 Stereophile (Vol.17 No.5, p.91) I evaluated one of two new models from McIntosh; Meridian has recently begun production of its DSP surround-sound processor; Kinergistics has jumped in; Esoteric Audio Design showed an elaborate unit at the SCES in Chicago; and Madrigal, best known for its deluxe line of Mark Levinson electronics, has added the PAV audio/video preamplifier to its more affordable Proceed line. The PAV isn't exactly cheap, but for your money you get perhaps the most complete (with a single exception, as we shall see), intelligently designed, flexible device of its kind.

Making the most of the PAV's capabilities—which, after all, you are paying for—does require some effort. It's not for the easily intimidated, or for those whose VCRs endlessly flash "12:00." The PAV will, however, reward those who master its complexities. Madrigal has done their best to simplify this process with a superb 65-page owner's manual. If the length sounds daunting, it's not—the manual is thorough, well-organized, and easy to understand; it even includes chapters on room acoustics and planning your Home Theater installation.

The PAV's front panel is ergonomically slick, including an LED readout that gives you most of the information you're likely to need. But you'll probably rely primarily on the remote control and the on-screen displays. The remote—unusually comprehensive, if complex—provides all the controls you'll need to calibrate and operate the system. More than that, you can "teach" it to operate a VCR, laserdisc player, CD player, or similar device, by programming the additional buttons.

Actual everyday operation of the PAV isn't difficult. It doesn't have a zillion different surround modes—just Pro Logic, THX, stereo surround, straight stereo, a mono surround mode, and mono. The primary adjustable audio parameters are the level adjustments (for all channels) and the rear-channel delay. This is the limitation I referred to above. For many, it will be a plus, not a minus; but if you like to diddle endlessly, creating variations on a theme with simulated surround modes, then the Proceed is probably not for you.

Setup and calibration are a bit more complex. The "learning" remote is very flexible, but it's a bit nonintuitive in the setup mode, with buttons taking on meanings other than those indicated by their labels. But once you learn to navigate the on-screen menus—again, the manual is indispensable here—you can quickly do the operations. And having full control from the listening chair over all setup adjustments is a convenience I wouldn't care to do without.

As a THX-approved processor, the PAV does all of the THX-approved things to the signal when the THX mode is selected: re-equalization to roll off the treble in a controlled fashion, to compensate film soundtracks that sound too hot in the top octaves in a Home Theater system; timbre matching to better balance the surrounds spectrally with the front; and decorrelation to provide some variation to the left and right mono surrounds, and thus improve spatial presentation.

The PAV has a complete complement of audio and video inputs and outputs—S-Video included—plus a remote stereo (two-channel) output intended to feed a system that may be located in another part of the house; it's possible to simultaneously feed different sources to the main and remote circuits. The remote output receives the straight stereo input at full volume (provision to adjust the remote volume must be provided at the remote location), regardless of whether any surround mode is being used by the main system. You can also select a video source, then select an audio source and have the audio source override the video sound. This capability might be useful for receiving simulcasts (though now rare), or to feed the video sound through an outboard D/A converter.

The PAV also provides for adjusting the input-level sensitivity to ensure the most accurate tracking of the Dolby Pro Logic circuitry (particularly in the surround channel, where level-sensitive Dolby noise-reduction is used). This input adjustment is not extremely critical (many processors omit it entirely), but it ensures optimum performance and avoids possible overloading of the Pro Logic circuits.1 The input calibration can be made for all of the inputs, preventing abrupt level changes when switching from one to another.

I don't have enough space here to discuss all the operational functions and features of the PAV, but there's one quite

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1 Most laser-disc and CD players have maximum outputs of about 2V, but a few exceed this by a considerable margin.
useful feature that’s “buried” on p.47 of the manual under “Using the PAW/The Operate Menu/volume display.” The volume can be displayed on an absolute scale ranging from 0 to 112, or on a relative scale, with a level of 0 indicating the calibration reference level—the level at which most soundtracks are mixed. (With proper calibration, this level, in THX mode, is also the level often referred to as “THX reference” level.) I preferred the relative scale.

TECHNOLOGY
The Proceed PAW is designed around the Analog Devices SSM2125A PMI Pro Logic chip. With the exception of the surround delay, the internal processing is all analog. All audio and video inputs are buffered. High-quality parts are used throughout, some of them also appearing in the Mark Levinson No.38 preamplifier. Each section—audio, video, and control—has its own isolated power supply driven from separate secondary windings on the toroidal power transformer. The input switching, surround decoding, rear-channel delay, and volume and input driver circuits are all independently regulated: in all, 17 regulation stages.

The PAW’s decorrelation circuitry is rather unusual. Proceed claims to be the first manufacturer to perform decorrelation by subtly shifting the left and right surrounds randomly in time. Other manufacturers use a frequency or a phase shift, neither of which, argues Madrigal, sounds as natural. In fact, Madrigal is so convinced of this that they’ve used some 250 components to implement this time-based decorrelation (compared with the approximately 50 components in the basic Pro Logic circuitry).

To improve RF performance, a four-layer circuit board is used for the control, video, and digital circuits. The video circuitry has a 20MHz bandwidth, input to output, with a 65MHz (at 75 ohms) bandwidth line-driver on each output. The video on-screen character generator is in-circuit only while characters are actually displayed, so it won’t degrade video performance in normal operation.

Most of the PAW’s major operating functions are controlled by a replaceable ROM chip; for upgrades, the manufacturer simply burns and distributes a new one. A recent change—which I haven’t yet incorporated as I write this review—includes a phantom center option, the lack of which was a conspicuous omission in the original design. The same change also offers the choice of blue or black screens when an inactive video input is selected, which is useful if you wish to listen to music in the dark.

I did encounter a problem with an early sample of the PAW: On two occasions the on-screen menus refused to appear when commanded. A new remote control didn’t alleviate the problem—it cured itself each time after a few days, for no apparent reason. This sample was from the prototype run; a later production sample exhibited no such anomaly.

SYSTEM
I used the PAW with a variety of associated components. At the loudspeaker end were both the McIntosh and the B&W THX arrays, plus a combination of the two, consisting of McIntosh LCRs (left, center, right)—including their new HTF-4 narrow-profile center channel—and B&W subwoofers and surrounds.

The Panasonic LD-1000 laserdisc player was at the front end, used either with its own internal D/A or connected to the Levinson No.35 D/A via a TosLink connector (the Panasonic, like all but a few laserdisc players, has only a TosLink digital output). Adding the No.35 provided improved performance over use of the LD-1000 alone. With laserdiscs as the source, the difference was not as dramatic as the added price would seem to require, but neither was it insignificant. Amplification was a McIntosh 7106 six-channel amplifier, and I later used an NAD 208 to drive the B&W subwoofer pair (the PAW’s mono subwoofer output drove both channels of the NAD in parallel, with one channel of the NAD driving each of the B&W subs). Substituting the NAD more than tripled the power available to drive each subwoofer, paying significant dividends in bass impact and solidity.

Interconnects were Monster M1500. At the loudspeaker end, the hookup was a bit of a hodgepodge, since I have in-wall cables running from the amplifier location to the LCR and surrounds (Monster's best in-wall as of one year ago—similar to Powerline II). In addition, short lengths of Kimber 4TC linked the power amps and the wall jacks at the source end of the in-wall cables. At the front-channel loudspeaker end, the wall jacks were linked to the LCR loudspeakers by 8’ lengths of Monster M15. I later changed the L and R connections to Music Metre cable because I needed a slightly longer length than the Monsters, and I had a 10’ pair of Music Metres on hand. The total lengths of the cabling to each surround was about 50’, to each of the fronts about 30’. The cabling to the subwoofers was AudioQuest Jade 2 Hyperlitz.

FILM SOUND
Pro Logic involves a considerable amount of processing to “fold” the original four-channel master into two channels on the laserdisc or other recorded medium, and again to recover some semblance of four channels on playback. Yet I find myself consistently amazed at how effective the result can be.

2 At present you should read nothing more into my use of the latter hybrid system than the fact that I was beginning an evaluation of the B&W THX loudspeakers, but wanted to retain the more familiar (to me) McIntosh fronts as a stable reference for the PAW review. The combination definitely worked well together, however.
when it's a part of an overall home audio/video experience. While still noticeably short of hi-fi, audio-only reproduction in a top-quality Home Theater system with the best sources can nevertheless be totally absorbing, and far superior to any optical Dolby Stereo soundtrack I've ever heard in any theater.

I find it hard to imagine any better realization of the Pro Logic concept than that in the Proceed PAV. It's smooth yet detailed, free of distracting artifacts, and quiet. In the world of high-end audio-only playback, these would be assumed minimum standards. In the world of Pro Logic Home Theater, they're important virtues.

I did most of my video-sound listening to the PAV in its THX mode. When I first heard a home THX system a couple of years ago, I confess that I found the sound rather dull—lacking in spaciousness on top and somewhat overripe lower down. With the PAV in my room, driving any of the speaker combinations mentioned above, this was very definitely not the case. With the THX circuits engaged, the top end sounded almost sweet on the best soundtracks (particularly with the McIntosh front-channel loudspeakers), though appropriately gutsy and in-your-face when needed. Switching to straight Pro Logic did increase the sparkle and openness in the treble, but at the cost, on many films, of a less than sweet and silky sound. The blame for this appears to be in the recordings, not the PAV; this substantiates, for me at least, the validity of THX re-equalization for soundtracks.

A surround-sound processor for films must get four primary things right: dialogue, music, sound effects, and directionality. First of all, the dialogue must be believable—free of tizz, spit, sizzle, boom, or boxiness. If it doesn't sound reasonably convincing—or worse, is actively irritating—it will quickly destroy the illusion. The whole carefully constructed house of cards collapses instantly.

The PAV doesn't have this problem. I listened to a wide variety of discs and broadcast material and never heard any consistently identifiable dialogue artifacts. Dialogue sound wasn't always ideal, but it rarely is with such source material. The Proceed let me hear clearly into each individual dialogue mix without exaggerating its inherent aberrations or adding any obvious ones of its own.

Film Music

And the music? I confess that, for me, this is a make-or-break quality in a film. Many laserdiscs have very fine musical tracks—in some cases they're better-recorded than the soundtrack albums spawned from them. The Proceed did a terrific job with the best of these recordings. Listen to the superbly recorded scores on Daw and Rudy; neither is at all bombastic or showy, but each adds measurably to the enjoyment of two first-rate films. (Dawe is, by the way, the better-recorded. Rudy, however, counters with a marvelous Jerry Goldsmith score, and, for my money, was one of the best films of 1993.)

Or how about the music from 1942, Conquest of Paradise? While I'm not convinced that Vanelli's dramatic, synth-heavy score is quite right for this Ridley Scott film (by far the better of the two Columbus vehicles produced in 1992, though still hardly a classic), there's no denying that the combination of image and music here works to great effect in several eye-popping and ear-pleasing sequences. The PAV did them full justice. If the music reproduced on other well-recorded laserdiscs I watched is not up to the quality of the best audio-only recordings, I'm in no way ever felt short-changed in listening to them in the PAV's THX mode.

Incidentally, dialogue tends to be overly prominent in many mixes, forcing the music too far into the background and, in the process, reducing soundstage depth and spread. I often reduce the level of the center channel—where the dialogue is concentrated—by as much as 3dB, which often results in a dramatically improved soundstage and a more rewarding balance in the musical score. In my room and system, this doesn't degrade dialogue intelligibility when films are played at near-reference playback levels. There are, however, some soundtracks where the dialogue is actually slightly recessed; Backdraft is a good example. In this case, the opposite cure is called for. (One important benefit of Home Theater over actual movie theaters is that you can control such balances.)

This leaves sound effects and soundstaging. With the former, the PAV left nothing to be desired; but whether or not it reproduced the sound effects naturally is an open question. The big effects in films are often totally artificial constructs in the first place, and are designed with impact, not realism, in mind. The T-Rex in Jurassic Park, for example, "spoke" with a clever compilation of lion, seal, dolphin, whale, and elephant—and probably throat of newt. So while the PAV's sound-effect reproduction wasn't always "natural"—how could it be?—it was nearly always perfectly convincing.

As to soundstaging, the same holds true—as a whole, it was topnotch. The logic steering inherent in Pro Logic was done inconspicuously. That held true for the surrounds as well, which were subtle much of the time, becoming obvious only when it suited the action. This performance, of course, is dependent on the system's being properly set up and calibrated to begin with. Depth was also often stunningly rendered with the PAV. Those who claim that soundtracks have no inherent depth have simply never heard the best of them properly reproduced.

Comparisons

How did the Proceed compare with the McIntosh C39, which I reviewed as part of the complete McIntosh THX system in May 1994 (Vol.17 No.5, p.91, with a Follow-Up in August)? Functionally, the PAV is much more flexible, with on-screen displays and that all-singing, all-dancing, "learning" remote. I found that the capability to individually adjust the levels of the center, surrounds, and subwoofer(s) with the PAV without interrupting the program was a real plus. The McIntosh gives you both overall-level and surround-level adjustments on the remote, but you have to walk over to it and enter the calibration mode—test tones and all—if you want to tweak the subwoofer or center-channel levels during a program. Less flexible than the PAV, the C39, in compensation, is somewhat more straightforward to set up and operate.

I compared the sounds of both processors primarily in their THX modes, playing laserdiscs. (I did use the Pro Logic mode with Glory, which sounded best without THX re-equalization.)

I should first note that when I initially substituted the PAV for the McIntosh, nothing screamed "major upgrade" at me. With the exception of some steering problems in early McIntosh samples, long since sorted out in production, both the PAV and the C39 performed superbly. This isn't entirely surprising, since each is built around an Analog Devices chip. There are some differences in execution—notably in the THX mode, where McIntosh uses frequency shifting and Proceed time shifting to decorrelate the rear channels; but this didn't seem to result in any dramatic sonic differences.

Over this long-term listening period, however, my cumulative feeling was that the Proceed was sonically more precise—even surgical—in its soundstage recreation, but without the brightness that this might imply. The McIntosh, on the other hand, was a shade warmer—a bit more relaxed.
A closer, side-by-side comparison of recent samples of the two units reinforced these earlier impressions. It also indicated that the Proceed presented the more finely graded detail. On Patriot Games—an another first-rate soundtrack—the PAV sounded more open, with a slightly less homogenized quality evident in more convincing reproduction of subtleties: e.g., the wind whistling around Ryan's house in the climactic scenes, and the space and depth in music scoring mixer Shawn Murphy's stunning recording of James Horner's remarkable score. I noted the same differences in other first-rate soundtracks. In Glory, however, the choice was much more of a toss-up, with the slightly sweeter sound of the McIntosh running neck-and-neck with the Proceed in reproducing the astonishingly good sense of depth and space on this laser-disc—particularly in its music (not coincidentally, another fine Murphy/Horner collaboration).

In the final analysis, I had a slight but definite preference for the PAV's pristine, if slightly cooler, sound. The McIntosh was in no way humbled, however, and it is some $700 less expensive (even less if you purchase it without its THX option).

One additional feature of the PAV which deserves mention is the mono surround mode that the PAV provides for non-stereo-encoded program material. I've never heard successful enhancement of mono before, and I didn't hear it here, either. Every time I switched from straight mono to mono surround, I found that the basic sound was degraded, rather than enhanced, by a rather bloated, imprecise quality. There's probably material out there somewhere that will benefit from such "enhancement," but I found that straight mono worked best with mono material.

IN THE LISTENING ROOM

I was initially surprised at how well the PAV performed as a stereo preamp. I shouldn't have been; a system with the Proceed Pre (a new, two-channel, preamp—only version of the PAV), a Proceed power amp, and two Magnepan MG.27 loudspeakers had been one of my favorite systems at the recent Stereophile High-End Hi-Fi Show in Miami. In its stereo—only, preamp-only mode, the PAV was hard to fault; it had an easy, relaxed sound, good definition, and no irritating qualities.

But it couldn't quite match the Rowland Consummate I compared it with. Stacked up against the Rowland, the PAV's sound was less expansive, with a subtly grainier top end and a less extended deep bass. In compensation, the bass from the PAV was tighter; yet that same quality may have been responsible for the PAV's somewhat leaner, less palpably there sound—particularly on vocals.

An audiophile friend who also heard the comparison in my listening-room reference system (Mark Levinson No.31 transport and No.35 processor, Krell KSA-300S power amp, and Energy Veritas v2.8 loudspeakers) commented that the "magic" was missing with the PAV, but was clearly there with the Rowland. I don't disagree with his judgment, but it may be a bit severe. Remember, the Proceed is essentially a $2000 preamp with a $2200 surround—sound processor built in. The Consummate is a $6000 preamplifier. I'm certain that even Madrigal would argue that their own, more-expensive, Levinson—brand preamps would outperform the PAV in its stereo mode.

What the PAV is, however, is a solid—performing preamp that will in no way embarrass the best high—end Home Theater systems in which it's likely to be used—with either music or films. Its stereo—surround music mode is effective, but should you choose to listen to your music in normal, unprocessed stereo, you'll get an easily Class B preamplifier tied to a Class A Pro Logic/THX processor.

MEASUREMENTS

All of the measurements here, except as noted, were made from the unbalanced outputs with an unbalanced input. The PAV's gain, at a maximum setting of the level control, measured 12dB. Its output impedance measured just over 20 ohms (40 ohms balanced), its input impedance just under 95k ohms (22k ohms balanced). The output impedance at the tape outputs was just over 10 ohms, regardless of the source impedance—indicating buffered tape outputs. The DC offset at the PAV's outputs tended to fluctuate—as it does with many amps and preamps—but it generally measured 2.5mV or less on all outputs.

With the volume control set at maximum, the PAV's gain measured 12dB in stereo and Pro Logic, 10dB in THX—a difference I found peculiar. It turns out the gain in all modes is the same up to the final few steps of the volume control. The THX re—equalization circuits have an insertion loss of 2dB. In order to keep the levels equal when switching between modes, the PAV's designers increased the net gain in THX by 2dB to make up for this loss.

The steps of the PAV's main volume control measured 0.5dB within a small fraction of a dB, as specified, over most of its range. The same was true of the individual adjustments for the center, subwoofer, and surrounds. Volume—control tracking was outstanding for the left and right channels, with slightly more deviation—up to 0.08dB! in the center channel.

The PAV was non—inverting at all of its outputs, and pin 2 of its balanced outputs was positive. Its signal/noise ratio, measured relative to a 1V output, is shown (to the nearest decibel) in Table 1. The noise increases in both the Pro Logic and THX modes—this is typical of surround—sound processors. The balanced results, shown in parentheses, are generally slightly higher than the unbalanced—interesting.

Table I: Proceed PAV S/N (unweighted) ref. 1V

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Fig1 Proceed PAV, frequency response, from top to bottom, of the front left channel (without high-pass filtering) in Stereo, Pro Logic, and THX modes, and the surround channel in Stereo, Pro Logic, and THX modes (2dB/vertical div).
not supposed to have any bass in the surroundings below about 80Hz, many processors incorporate a rolloff here), but exhibit the top-end rolloff typical of Pro Logic. The added top-end contouring in the THX surround response, including the ripples above 3kHz, is THX's timbre-matching.

Fig.2 shows the subwoofer output of the PAV overlaid with the left-channel, high-pass–filtered output. This, the setup typically used in a home THX setup, shows the sharp rolloff of the THX high- and low-pass filters. With the output levels matched at 20Hz and 1kHz, as in the curve, the crossover is actually a bit lower than the THX-specified 80Hz; in practice, this won't be particularly significant.

The crosstalk (fig.3) is, as expected, lowest in the stereo mode; the increase in crosstalk with Pro Logic is simply in the nature of the multi–channel matrix. The reduced crosstalk at high frequencies in the surround channel is largely a function of the latter's high–frequency rolloff. The THX crosstalk was almost identical to that shown for Pro Logic, though, again, with some top–octave variations due to the THX HF compensation.

The PAV's THD+noise, taken with an input of 500mV, is shown in fig.4. Note that the surround THD, taken over a limited bandwidth of 100Hz to 7kHz, is generally as low as, or lower than, the THD of the front channels. The THD+noise of the subwoofer output isn't shown, but it's comparable to that of the front channels. The THX readings, not shown, virtually duplicate those of Pro Logic. As expected, the THD+noise in the stereo mode is by far the lowest, but the THD+noise for Pro Logic/THX is still quite respectable.

I also measured the THD+noise vs output voltage on the PAV in both the Stereo and Pro Logic modes, at the full setting of the level control. My primary reason for doing this was to determine if a 500mV input was suitable for the other measurements (I actually made this last reading first). With a gain of 12dB, 500mV at the input translates to an output of about 2V. As you can see in fig.5, a 2V output is well within the PAV's capabilities—both in stereo and Pro Logic. The PAV's input–level adjustment capabilities will, in any event, enable it to be configured for use with virtually any CD player, D/A converter, or laserdisc player without risk of overloading.

Though all of my listening to the PAV was done in its unbalanced mode, I also made a number of measurements using its balanced inputs and outputs. Its balanced gain, frequency response, and likely to be the first to market), it will use some form of data reduction to place 5.1 non–matrixed channels (the 0.1 is the limited–bandwidth subwoofer channel) onto a laserdisc. Separation between the channels will be dramatically improved over that of Pro Logic, the rear–channel decorrelation and delay won't be required, and all channels (except the subwoofer channel) will be full-range. Existing processors, including the PAV, won't be compatible with this and will have to be redesigned.

Should you wait? Not necessarily. Pro Logic will be around for a long time. It'll take years to remaster existing titles for the new system, and many titles will never be remastered. Only you can decide if an investment now in an expensive Pro Logic decoder will be justified. If you must be the first kid on the block with the new toy, then you just might want to wait until the new discrete, multi–channel system is available.

But if you want state–of–the–art Pro Logic and THX processing today, and don't want to settle for a compromise until there's sufficient new–format software to justify purchasing the hardware to play it on, the PAV is waiting. It's expensive, but as part of a first–class, no–compromise Home Theater, it's worth every penny.

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The Federal Express delivery man was having a hard time carrying the box containing the Krell KSA-100S up the front steps.

“What’s in here, anyway?”

“It’s an audio amplifier.”

“You’re kidding! I didn’t know they made them that heavy.”

“Well, this model is only second from the bottom in a line of four. The top model weighs 185 lbs.”

“I sure hope you’re not getting one of those, too!”

Mr. Fed-Ex need not have worried. With a shipping weight approaching 100 lbs, the KSA-100S is about as heavy an amplifier as I can manage. Given the rave the KSA-300S received from Tom Norton in the January ’94 Stereophile (Vol.17 No.1, p.92), I’d like to have had one on hand to compare with the KSA-100S—but I just couldn’t consider the prospect of schlepping an amplifier that weighs more than I do. (As it turned out, a later visit to TJN’s listening room allowed me to make the KSA-100S vs KSA-300S comparison without the risk of back injury.)

At $5500, the KSA-100S is expensive as well as weighty; although, again, it’s only second from the bottom in the Krell universe—you could buy six of them for the price of the Krell Audio Standard. It’s also every inch a Krell, from the custom-extruded anodized handles to the gold-plated, laser-engraved binding posts. Fit’n’finish are of the highest quality.

Like both the ‘300S and ‘200S, the KSA-100S uses the Sustained Plateau Bias technology introduced in the Krell Audio Standard. This is a variation on the “sliding bias” idea, except that bias is changed in four discrete steps rather than continuously. A so-called “anticipator circuit” at the amplifier’s input responds very quickly to an increase in signal level, so that, by the time the signal reaches that output stage, the output will be biased to class-A.

Once the bias has been increased to a certain level, that level will be sustained for 20–30 seconds, dropping to the next lower level if the signal level itself decreases consistently. As Tom Norton pointed out in his review of the KSA-300S, you’d need supernatural precognitive ability (or a delay system) to be certain that a signal peak wouldn’t come along just as you’re lowering the amplifier’s bias, but the anticipator circuit’s speed is such that the amplifier is unlikely to be caught with its bias down. (If there’s any kind of hiccup in operation, the amplifier will presumably function in class-AB for a fraction of a second. Tsk, tsk.)

The main advantages of the Sustained Plateau Bias approach over “pure” class-A are: savings in electrical power consumption (a sort of “Green class-A”), and cooler running. The S-series amplifiers have four sets of LEDs, one for each bias plateau; these provide a way of checking the amount of power being used. They’re also quite distracting—the way all power meters are—so, once I found out that I would have to listen at an uncomfortably high level to trigger the top set of LEDs, I turned the monitoring off for all normal listening. One Krell dealer told me that he thought the amps sound better with the LED display turned off, but I couldn’t hear a difference.

Like the KSA-300S, the ‘100S has balanced as well as single-ended inputs, and two sets of binding posts (which accept only spade lugs, not banana plugs), making it ideal for bi-wiring. Also, like its fellow S-series amps, the KSA-100S has a take-no-prisoners power supply, with power that doubles down to 1 ohm, putting out 800Wpc into that impedance. There’s protection circuitry to deal with all sorts of potential problems, and I know it works: the KSA-100S shut down at one point, and, checking the connections, I found that the pair of spade lugs at the speaker end had touched, producing a short. I corrected the problem and pressed the Power-On button, but the amplifier still wouldn’t come on, presumably because the temperature of the heatsinks was too high. However, after a few minutes’ wait, everything was back to normal, and the KSA-100S was gracious enough not to make any recriminations about my indiscretion.

**System**

Analog: Fully dressed Linn LP12 (Lingo, Trampolin, Cirkus), Ittok, AudioQuest AQ7000mx, Digital: PS Audio Lambda transport, PS UltraLink processor, AudioQuest OptiLink Pro 2 ST datalink, Preamps: my own Convergent Audio Technology SL-1 Signature and a borrowed Krell KRC. A pair of Bryston 7Bs (the
non-THX version)—amplifiers whose sound I’m quite familiar with—served as a reference. I operated the Brystons in the parallel mode. Interconnects: TARA Labs RSC Master and Purist Audio Design Colossus Mk. II (5m lengths for the preamp-to-amp connection). Speaker cables: 8' bi-wire sets of TARA Labs RSC, Purist Audio Colossus Mk. II, and Dunlavy Audio Labs 2-8. My listening room has two dedicated AC lines; digital components were plugged into a Tice Series II Power Block. As the CAT SL-1 has its own Power-Block-like isolation transformer and further AC conditioning is not recommended, I plugged it directly into an AC outlet. I did my initial listening via the Krell KRC with “untreated” AC, but I later found that it sounded better plugged into the Tice Power Block. (The CAT sounds better straight.) Speakers were Dunlavy Audio Labs SC-IVs (reviewed in April ’94)—they’re sensitive by audiophile standards (91dB/W/m), have very even impedance and electrical phase characteristics, but are somewhat demanding of current.

LISTENING PRELIMINARIES
To me, the process of audio-component evaluation has three phases: First, the “getting acquainted” phase, where the new component—eg, a loudspeaker or an amplifier—is dropped into the audio system, followed by a period of days or weeks of relatively informal listening. During this period, I try to suspend judgment, keeping in mind that what I’m hearing may not represent the product at its best. Of course, it’s impossible not to form some impressions of the component, but these become merely hypotheses for later exploration.

The second phase of evaluation is devoted to system optimization and/or tweaking. It may be, for example, that the original system had a particularly synergistic combination of components, and changing one of the components upsets the synergy, even if the new component is, overall, superior. If there’s reason to suspect that any of the system’s components are unsuitable matches for the product under evaluation, a reviewer will routinely try—within practical limits—to re-optimize the system. To this end, different interconnects and speaker cables may be tried, and if the manufacturer has strong feelings about recommended associated equipment, the reviewer will try—again, within reason—to comply.

Once the reviewer is satisfied that the component is performing as the manufacturer intended, the more in-depth, analytical listening begins. At this stage, comparisons may be made with competing and/or reference products, some of the comparisons being made at matched levels. And then, of course, the reviewer commits to paper his or her thoughts about the component, based on personal whim and the desire to be controversial. (Just kidding!)

The Krell KSA-100S breezed through the “getting acquainted” phase of evaluation. Its sonic personality was recognizably solid-state, with the sort of bass response that seems to be outside the capability of tube amplifiers, but blissfully avoiding the hard, gritty sound that afflicts so many solid-state products, especially before they’re fully broken-in and warmed-up.1 So far, so good.

Unlike speakers or cartridges, amplifiers don’t lend themselves to easy tweaking. I installed a set of Krell’s custom spoked, called Acoustic Mass Dampers, replacing the amplifier’s rubber feet. This allowed the amplifier chassis to be well clear of my listening room’s thick carpet. In the course of shifting the amplifier about, I noticed that the chassis’s top plate emitted a fairly loud “ping” when tapped, as did the heatsinks. I put a VPI brick on the top plate (making sure not to block the vents), which reduced the resonance considerably. (It had no effect on the resonance of the heatsinks.) If one accepts the claims of manufacturers like YBA and Convergent Audio Technology—and I do—mechanical resonance is a subtle but important source of distortion in amplifiers and preamplifiers; so, if I were a KSA-100S owner, I’d look further into this area of tweaking. (In case you’re wondering, the VPI brick did slightly improve clarity.)

Further sonic improvements were brought about through use of the Purist Audio Designs System Enhancer CD and the Gryphon Exorcist (see sidebar). I experimented with the various speaker cables I had on hand, and found the Dunlavy D-8 to provide the best overall match. Both the Purist Colossus II and TARA RSC interconnects worked well in the system, the Purist cable sounding a bit more mellow.

The CAT SL-1 Signature preamp was Stereophile’s 1993 “Product of the Year,” and I had no reason to believe that combining it with the KSA-100S would be in any way problematic, but I wanted to check out how the KSA-100S would fare with its Krell-mate—the KRC. This also allowed me to compare the KSA-100S with the Bryston 7BS at matched levels (the CAT’s volume control has discrete steps that are too big for level-matching), and to evaluate the KSA-100S’s unbalanced is balanced mode of operation (the CAT is unbalanced).

The KRC turned out to be a superb preamp—every bit as good as Tom Norton said in his review, though I still prefer the CAT. Comparing the balanced vs unbalanced connection to the KSA-100S through identical lengths of TARA RSC Master, I found that the balanced connection was indeed superior, having a noticeably lower noise floor. Most of the listening involving the KRC was done through the balanced connection.

SOUND
As I’ve already said (you didn’t skip “Listening Preliminaries,” did you?), my initial impression was that the KSA-100S had a rather soft sound by solid-state standards—not dull, not rolled-off, just a bit on the soft side of what I take to be neutral. This impression diminished with continued listening and changes in associated components, but it never quite went away. Compared to the Bryston 7BS, the Krell KSA-100S had somewhat smoother, more delicate highs, but the Brystons evinced sharper focus and had more snap.

This was apparent on “Festival Day in Seville”—track 3 on Reference Recordings’ HDCCD sampler. Listening through the KSA-100S, everything seemed to be in its place, with good depth and with transients having clarity without edginess; but when I changed to the Bryston 7BS, the sonic picture was further cleaned up—as if a haze that I hadn’t previously noticed had been wiped away. The bass drum on track 1 (the first movement of Nelliebel’s Trío) seemed very deep and firm through the Krell, but was deeper and firmer through the Brystons.

Mark Levinson’s (the man’s) recording of Bach’s Schübler Chorales (Cello Acoustic Recordings, Vol. I) was less forward through the Krell, but this was not an advantage on this recording; the Brystons reproduced the organ’s sonority with more authority, and the ambience of the recording site was more present. With this recording, I also found the sound to be subjectively louder through the Brystons, even with the levels matched and the Brystons’ output set a hair lower. (Neither amp was anywhere near its maximum output; the KSA-100S had only the lowest-level bias indicators lit.) The Krell’s dynamics were again bettered by the Bryston monoblocks. The many percussive sounds of the All Star Percussion Ensemble (Golden String GS CD 005) had lots of clarity.

1 This sample of the KSA-100S had been previously used by Jack English for the review of the Merlin Escalator II (Vol.16 No.12, p.180). I left both the KSA-100S and the Bryston 7BS on continuously during my listening tests.
The notion that you can improve your audio system’s performance by having it process specially designed signals is an idea whose time appears to have come. Thomas O. Müller, writing in The Absolute Sound, has touted the use of the Sumiko Fluxbuster as a system-wide demagnetizer, calling it the “Tweak of the Year.” Purist Audio Design has released its System Enhancer CD, recorded on a CD-R, which has a number of what designer Jim And refers to as “programs” (computer-generated signals) that are supposed to both burn-in and maintain the performance of audio components, including electronics, cables, and speakers. Gryphon, the Danish company best known for its megabuck amplifiers and preamplifiers, has a new product called Gryphon Enhancer, which is dedicated to system-wide demagnetization. Both the Purist Audio System Enhancer CD and the Gryphon Enhancer cost $150!

I routinely use a Sumiko Fluxbuster for its intended application—cartridge demagnetization—so the easiest thing to do was to follow Tom Müller’s suggestion: plug the Fluxbuster into the preamp’s phone input and let it do its thing. I found the results to be extremely subtle—maybe a slight decrease in noise level—but I was sufficiently encouraged to want to try the Purist Audio Design and Gryphon products.

The Purist disc was the first to arrive. With the system thoroughly warmed-up, I listened to my most frequently used test CD (Claskey JD37), then played the System Enhancer disc once (getting as far away from the listening room as possible—those computer-generated signals are distinctly unmusical), and listened again. No doubt about it: the sound had much greater ease, with improved dynamics and less of an electronic/mechanical quality. Bass seemed tighter and better integrated with the rest of the range. Over the next few days, I put on the System Enhancer CD whenever I left the house (Purist Audio recommends playing it for 24 hours) and found further, albeit much smaller, improvements. I even tried it in my car stereo (an Alpine CD changer and the stock head-unit supplied with the Acura Legend). Once again, the sound became more relaxed and easier to listen to.

A couple weeks after my highly positive experience with the Purist disc, I received the March issue of Stereophile, in which Sam Tellig waxes eloquently about the System Enhancer. I completely agree: although $150 seems expensive for a CD, it’s a bargain in terms of what it does.

What about the Gryphon Enhancer? Would this line-stage demagnetizer do anything over and above the substantial improvement brought about by the System Enhancer disc? Yes, indeed. The highs acquired a greater degree of purity, with even less of an electronic sound. (Pretty soon we’ll surpass perfection.) I also tried the Gryphon Enhancer and Purist System Enhancer, in that order, in my video sound system; this time, the Enhancer had the more dramatic effect? but with some improvement brought about by the System Enhancer disc as well. Looks like you need the System Enhancer and the Enhancer for optimum results. —Robert Deutsch

1. Along with the $30 Sheffield Labs XLO Test & Burn-in CD, which I haven’t had a chance to try, these products were reviewed by Jonathan Scull in June ’94 (Vol.17 No.6, p.139). (By now my system is so thoroughly burned-in/demagnetized/enhanced/exorcized that I would have no way of checking whether the Sheffield XLO disc does what’s claimed.) —RD

2. British writer Alvin Gold has pointed out that as the Enhancer puts out a loud 1kHz tone, if you listen to it while it’s working its magic, this will result in a temporary 1kHz notch in your hearing sensitivity. Music listened to immediately afterwards will sound different due to the presence of this notch.

—JA

and detail through the Krell; but the Brystons, while sounding just a bit on the brash side here, had more get-up-and-go.

Switching back and forth between the two amps, using the CAT SL-1 Signature or the KRC, with levels precisely matched, I had the persistent feeling that the Krell KSA-100S, while not deficient or lacking in any obvious respect, was edged out by the Bryston 7IBs in communicating the excitement of music that’s high in rhythm and dynamics. 2

The KSA-100S came more into its own in its depiction of midrange timbre, especially voices. These tended to sound a bit too forward via the Brystons, especi-

1. I noted this slight lack of dynamic drive in my own auditioning of the KSA-100S, performed before I read JD’s report. I felt it primarily to be a function of the amplifier’s having a rather lightweight bass register, something I found surprising in view of the reputation of earlier Krell amplifiers for visceral low frequencies.

—JA

2. Maybe Obi-Wan Kenobi should have said to Luke Skywalker, “Beware the bright side.”
an obvious family resemblance, being easy on the ears and having little of solid state’s typical edginess. However, in matched-level comparisons, the differences that emerged were not trivial. The KSA-300S was simply more dynamic, with a more rhythmic quality, but with none of the added roughness that often characterizes high-powered amps. The first track of Mickey Hart’s Planet Drum (Rykodisc RCD-10206) came across with much more weight and authority; I had greater difficulty keeping my toes from tapping.

Bass fundamentals were firmer and apparently deeper. The opening of Tiran Dor (London 414 274-2) was similarly more exciting through the KSA-300S, voices having more body and being more sharply focused in the soundstage. (Remember: each amp was set to operate at the same level, well within its power limits.) The All-Star Percussion Ensemble’s version of the Scherzo from Beethoven’s Symphony 9 seemed quicker, and instruments within the soundfield were more clearly defined. The greater precision of depth and imaging was also apparent while listening to “Make Our Garden Grow,” track 8 on Testament (Reference RR-49CD).4 Many people believe that, as long as they’re not driven into clipping, lower-powered amps tend to sound better than higher-powered ones. That may be so in some amplifier lines, but I didn’t find it to be the case with these two Krells.

MEASUREMENTS FROM TJN

I measured the Krell KSA-100S in its balanced mode, repeating selected measurements in the unbalanced configuration.

Following the ½-power, one-hour preconditioning test, the KSA-100S’s heatsinks were only moderately warm.

The KSA-100S’s input impedance measured 47.3k ohms unbalanced, and just under 95k ohms balanced; its output impedance varied between 0.095 and 0.11 ohms, depending on the frequency and load (with the higher values at 20kHz). Voltage gain into 8 ohms measured 26dB, balanced or unbalanced. DC offset, though fluctuating slowly with time, hit maximums of about 6.9mV (L) and 6.7mV (R). Signal/noise (unweighted at 1W into 8 ohms) measured 85dB in the balanced mode, 83dB in the unbalanced configuration. The KSA-100S is nonlinear in the unbalanced mode; in the balanced, pin 2 is the positive leg,

pin 3 the negative.

Fig.1 shows the frequency response of the KSA-100S driven from its balanced inputs at 2W into 4 ohms. The response into 8 ohms was virtually the same. Note a slight added HF rolloff in the unbalanced mode; its audible significance should be nil. The response to a 10kHz squarewave in the balanced mode is shown in fig.2: it has a short risetime, no overshoot, and only the slightest rounding on the leading edge. The 1kHz squarewave response (not shown) was perfectly square.

The crosstalk shown in fig.3 indicates nearly identical performance in balanced or unbalanced configuration, and requires no comment.

The THD + noise vs frequency for the balanced mode is plotted in fig.4. While the results aren’t the lowest we’ve ever measured, they’re nonetheless unlikely to affect the amp’s audible performance. The THD + N for the unbalanced configuration was marginally higher, but not by more than 0.03% (not shown). The 1kHz distortion waveform (fig.5) is dominated by low harmonics. The result for a 2 ohm load, which is shown, wasn’t visibly different into 4 and 8 ohms.

The spectrum of the KSA-100S’s output, reproducing 50Hz at 13W into 4 ohms (½-rated power at that load) is shown in fig.6. The distortion components here are all at or below 0.1% (~60dB), with the third-harmonic being the highest in level. Fig.7 shows the spectrum of the amplifier’s output reproducing a combined 19+20kHz signal—the intermodulation products resulting from an input signal consisting of an equal

4 The recording quality is first-rate, but the Turtle Creek Chorale’s performance of one of the most moving songs Bernstein has written illustrates everything I hate about choral arrangements of Show music.

Stereophile, September 1994

WorldRadioHistory 101
combination of these two frequencies—at 108W into 4 ohms. The largest artifacts here are at 18kHz and 21kHz (~55dB and ~54dB, respectively—0.2% or less). The component at 1kHz is ~68dB, or about 0.04%. The 19+20kHz artifacts at 55W into 8 ohms (not shown) were similar, though slightly lower—particularly at 1kHz (0.008%). These power levels—108W into 4 ohms and 55W into 8 ohms—were the highest attainable with this input signal prior to visible signs of clipping.

The 1kHz, THD+N vs level curves are shown in Fig.8. The general shapes of the curves here are very similar to those of the KSA-300S (measured in my review in Vol.17 No.1, p.92), rising to a virtual plateau somewhere between 1W and 10W, then remaining at or near that value until reaching the knee of the curve—the point just prior to clipping. The latter, of course, occurs at a much higher level in the larger KSA-300S. The KSA-100S's discrete-clipping levels (at 1% THD+N) are shown in Table 1.

Table 1: Krell KSA-100S Clipping (% THD+noise at 1kHz)

<table>
<thead>
<tr>
<th>Load ohms</th>
<th>Both Channels</th>
<th>One Channel</th>
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<td>Driven</td>
<td>One Channel</td>
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<tr>
<td>ohms</td>
<td>(L)</td>
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<tr>
<td>8</td>
<td>103 (20.1)</td>
<td>103 (20.1)</td>
</tr>
<tr>
<td>(line)</td>
<td>110V</td>
<td>113V</td>
</tr>
<tr>
<td>4</td>
<td>201 (20)</td>
<td>203 (20)</td>
</tr>
<tr>
<td>(line)</td>
<td>111V</td>
<td>112V</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>391 (19.9)</td>
</tr>
<tr>
<td>(line)</td>
<td>112V</td>
<td></td>
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</tbody>
</table>

Dick Sequerra got a call from Joe Grado insisting he purchase a portable CD player from Radio Shack (model CD-3400, $179.95). Grado swore it out-performed units costing ten times as much. Sequerra got one, and upon analysis determined that the wonderful performance of the CD player could be substantially improved with a first-rate power supply. He designed one and told John Curl and Sidney Smith. They all agreed that with that power supply the CD player performed in the ten thousand dollar class. Word got around and Sequerra kept getting requests, so he's gone into limited production.

The Sequerra Power Station is composed of a long-life 6-volt high-current leak-proof lead-acid battery; a sophisticated, specially designed battery charger; a battery voltage indicator; high quality audio jacks; a high quality digital jack; all in a docking station platform housing made of a newly developed space-age non-resonant phenolic laminate with a black Nextel finish. Priced at $300, the Sequerra Power Station is only available direct from Dick Sequerra.

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Ne look at the Jadis JP-80MC should tell you that this is no ordinary preamplifier—it's a two-chassis vacuum-tube affair whose combined weight dwarfs that of many 100W solid-state sets. In fact, the external power supply is of such a caliber as to comfortably service a 35W tubed power amp!

The beauty of the JP-80MC is more than skin deep. It's clearly evident below its ravishing façade that fanatical attention has been paid to build quality, all passive parts having been selected on the basis of sonic excellence. Designers Jean Paul Caffi and André Calmettes devoted an extraordinary amount of effort to the design and execution of the power supply—the heart of any amplifier. Extensive regulation is used for all critical voltages in the circuit. Most notably, the high-voltage plate supply is regulated using a tube circuit which features an EL86/EF86 tube combo.

The JP-80MC features one tape loop, Tape/Monitor and Mute switches, and an auto mute circuit that kicks in whenever the unit is powered on. The mute delay is on the order of five minutes, so you can take a leak or fix yourself a cup of coffee until the green light on the front panel kicks in. For optimum sound quality, be prepared to wait about an hour until the preamp reaches its equilibrium operating temperature.

The JP-80MC has no balance control. Layout is dual-monaural—with separate attenuators provided for each channel. On the second sample I received, the volume controls were ganged—apparently as a convenience to satisfy the whims of lazy audiophiles. I actually prefer the unganged arrangement, when the proper inter-channel balance can be easily set simply by counting clicks for each volume control.

**More technical details**

A single 6DJ8, wired in parallel, is used as a voltage-gain stage for the moving-coil input. The most awesome 6DJ8 equivalent I've heard to date is the Russian Sovtek 6922. Both Sonic Frontiers and Audio Research now use this tube—you won't believe your ears when you make the switch. I didn't have a chance to experiment in this regard with the JP-80MC. For one thing, the stock 6DJ8 worked so well that I wasn't ultra-motivated to substitute alternatives; and for another, the Sovtek came to my attention late in the game. But if you've got a chance, give it a shot—the price is certainly reasonable.

Note that because the MC gain-stage bumps the total number of gain blocks to five (an odd number), the MC input inverts absolute polarity. Jadis opted to omit the convenience of a polarity-inversion switch because of the sonic compromise they felt inherent in such an approach. Monsieur Calmettes, designer of the JP-80MC, correctly points out that polarity inversions are quite common in the recording chain. It is, therefore, a good practice to listen to each recording with both polarities and note which works best. The reversed polarity may actually sound better with many records because the additional polarity inversion may align the absolute phase of the recording with that of the speakers. With the Jadis MC input, the best place to reverse polarity is at the speaker terminals: simply reverse the connections at both speakers, and let your ears be the final arbiters.

The RIAA equalization is accomplished in the moving-magnet section, which also provides two additional gain stages. The time-honored 12AX7 (ECC83) is used both here and in the line-level section. Nominal voltage gains are 80dB for the moving-coil input and 24dB for the line-level section. Since the circuit is single-ended throughout, only unbalanced outputs are available. A cathode-follower stage is used in the line-stage, which keeps the output impedance fairly low — on the order of 1k ohms. Therefore, partnering amps of even very low input impedance can be used, and fairly long cable runs are no problem.

**A Preliminary Perspective**

It's been well over 18 months since the JP-80MC first landed in my reference system. Undeniably, this is a long time out of the triumvirate of common 129B preamp tubes—the 12AX7, 12AT7, and 12AU7—the 12AT7 is my least favorite choice for voltage amplification because its amplification factor isn't as linear as those of the other two.

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1 Out of the triumvirate of common 129B preamp tubes—the 12AX7, 12AT7, and 12AU7—the 12AT7 is my least favorite choice for voltage amplification because its amplification factor isn't as linear as those of the other two.
for a review to gestate; so long, in fact, that I'm sure even Fanfare International's mild-mannered Victor Goldstein's patience has been severely tested. But there were extenuating circumstances.

For one thing, the product evolved sonically with a change in capacitors, which meant that I had to evaluate a second sample months after the start of the review—a matter upon which I will shortly elaborate. Furthermore, at the highest echelon of high-end audio, there's little residual coloration or obstruction of the music signal; system-specific component interactions tend to dominate the sonic signature of the overall system.

Let me tell you the apocryphal story about the reviewer who dropped a preamp into his system and promptly declared that it sounded "dark." By that he presumably meant that the system's harmonic colors had swung from a sunny disposition to a less bright palette. Granted, the system's sound had indeed undergone a transformation, but to ascribe the change solely to the preamp is procedurally incorrect. For example, what if the previous preamp had been, in fact, bright in character, and the rest of the system had been fine-tuned to accommodate its sound? After all, dark-sounding speakers partnered with a bright preamplifier might just sound reasonably neutral in color.

The moral of the story: To assess the sonic character of a state-of-the-art contender like the Jadis necessitates using it in several systems with different speakers, amps, and front ends. Only through such a process is it possible to reliably generalize about its inherent sound. Over the past year I've exposed the Jadis to a dozen or so speakers and amps, and about five different front ends. Naturally, such an elaborate evaluation scheme takes a considerable time to complete.

Finally, it took the Jadis literally hundreds of hours to bloom to its full potential. I would consider a 200-hour break-in a minimum requirement for unleashing this thoroughbred's full esprit du son.

EARLY IMPRESSIONS: SAMPLE 1

That's not to say that the Jadis sounded bad right out of the box—it asserted its imposing musicality even with minimal break-in. My notes, dating back to September 1992, detail my first impressions of the JP-80MC when it replaced the combination of Threshold FET-10/e phono preamp and Jadis JPL line-stage in my system. The sonic improvements were as follows: spatial perspectives were more solidly sketched out and anchored within the soundstage; the impression of depth was noticeably increased; textures became more liquid, more relaxed in presentation, while the music's micro-dynamics were much more gracefully navigated from soft to loud.

However, there were also some problems that needed to be resolved. Bass lines sounded woolly—ie, fuzzy. It was as if Victor had read my mind; shortly after I received the review sample, he called to tell me that he'd substituted another brand for the stock EL86 tube in the power supply, and that, in hindsight, he wasn't happy with the resultant quality of the bass. The factory-supplied EL86 (which Victor Fed-Exed post haste) certainly helped matters. Better yet was a Telefunken EL86 that Victor sent along for me to try. Quite rare, and about as easy to purchase as a pound of Cryptonite, the Telefunken set the bass straight. Quite remarkable, I thought to myself, that merely substituting a power-supply regulator tube could have such an impact on the quality of the bass. Welcome to the mysterious world of high-end audio.

I also wondered out loud as to whether textures were too liquid—to the point of overly softening the music. After all, music's harmonic tapestry combines softness and hardness to weave textures from velvet soft to brassy. Solid-state gear typically emphasizes the hard, edgy elements of the harmonic spectrum. Tubes, on the other hand, tend to err in the opposite direction, offering a softer, more "glowing," view of musical reality. Traditionally, a choice between transistors and tubes has meant a vote for either muscular power or lyrical beauty. This balancing act between the brawn and the poetry of music must be negotiated by any high-end contender, and every preamp I've heard to date has paraded its own style or voice of phrasing harmonic textures.

In the beginning, the Jadis just sort of gripped the music. As time went on, however, it sprouted teeth to the point of offering a more balanced textural picture. However, one area of performance did not materially improve over time: Soundstage transparency, while outstanding in terms of Sub-$2k Preamp-Land, wasn't good enough to give me that crystal-clear view into the inner recesses of the recording venue that other Class A preamps have afforded. To be precise, the relative inaccessibility of the hall sound was more of a problem while using the line-level section alone. With both phono and line sections in the signal path, as during LP playback, my awareness of the hall's acoustic signature was considerably heightened.

Thus started a mad scramble for a magical tube complement that would punch me through the residual soundstage veil. I tried every 12AX7 at my disposal, and even pressed several of my prized gold-pinned Sylvania 5751s into service. Still, I wasn't entirely satisfied with the level of performance in this area. The barrier erected by the Jadis was such that I found it more difficult to immerse myself in familiar music. I had to work harder to mentally cross the line and lose myself in the illusion of live music—a bitter pill to swallow with a preamp that costs almost as much as my '93 Nissan pickup.

FINAL CHAPTER: SAMPLE 2

Victor called in June 1993 to inform me that the preamp had been "upgraded," in the sense that current production had changed over from the custom black capacitors to Philips electrolytic bypass caps. The story was that the source for the older caps had dried up, and the Philips 220µF caps had been selected after a search for suitable alternatives. Serendipitously and unexpectedly, the sound of the preamp improved in the process. Victor assured me that the sound had progressed from heavenly to sublime. And so a second sample (serial number 173) arrived on my doorstep later that month, outfitted with all "Yugo" EI tubes which I left in their sockets for the duration of the break-in period.

After the mandatory 200-hour break-in period, this latest sample began to resolve low-level detail and spatial outlines with laser-like precision. No, no, Señor, this resolving power was not an artifact of an etched or overly bright presentation, as is often the case with solid-state gear. Rather, it was the result of presenting a pristine, transparent musical window through which I could gaze into the heart and soul of the music. It became mere child's play to follow the attack and decay of transients over their entire waveforms—from the quick risetime of a plucked string to its delicate decay into the noise-floor of the recording.

I was the pernickish and chronic mild veiling that I complained about earlier. The inner recesses of the soundstage were brightly lit, affording a panoramic view of the orchestra. The surreal vistas of Lorena McKennit's The Visit (Warner Bros. 26880–2) came to life. Try a walk down to Camelot with
“The Lady of Shalott,” with the Jadis, you’ll turn to putty in Lorena’s hands. Resolving the vibrato of a soprano voice is an exceptionally demanding task for any system. For the effect to be pleasing, a note should be modulated at a rate of about 5 to 7Hz. And world-class singers have little trouble accomplishing this. On some nights, when I’ve got nothing better to do, I’ve actually attempted to count the individual cycles in a particular singer’s vibrato. Whether it was Kathleen Battle, Pilar Lorengar, or Kiri Te Kanawa, the Jadis made me feel like a vocal mike poised before these ladies’ lips. Not only was I able to resolve low-level detail with remarkable finesse, it was almost as if I was able to see down their throats.

The practical downside of all this was that heavily processed, multi-track recordings with gobs of sonic effects (of which, unfortunately, there are many commercial examples) were exposed—unraveled, if you will—bit by bit. Judy Collins’ latest, Wind Beneath My Wings (LaserLight 1545), was put through the high-magnification Jadis microscope to the extent that some of the FX managed to sound not only artificial but absurd.

Imagine coupling John Denver with Plácido Domingo (an ill-advised match, at best) or (heaven forbid) Willie Nelson with Pavarotti. In the same way, the Jadis demanded nothing but the best in matching audio components—including program material. With electrostatics such as the Sound-Lab A-1, or with high-resolution dynamic speakers, the precision of the Jadis shone through. However, because of its lack of its own tonal-balance personality or a strong harmonic flavor or tint, its sonic presence in the reproduction chain did not punch through loud and clear with moderate- to low-resolution speakers. It seems to me that inexpensive systems perform worse coloration at the front end to mold the overall sound of the system to a higher musical standard.

Palpability and focus of image outlines were so believable that spatial outlines appeared to be "hushed out of stone." The degree of delineation or separation between individual outlines was better than that afforded by any preamp I’d heard to date. Large choral works were painted with fine brushstrokes, without the spatial smearing or blending typical of so many high-end pretenders. The sea of individual voices that a large chorus ought to be (eg. Handel’s Messiah, Chesky CD106) was readily resolvable into its vocal constituents. Even more impressive than its handling of digital material was the Jadis’ stunningly felicitous reproduction of vinyl. My Symphonic-Line RG-8 Gold MC cartridge liked the MC input. At 48k ohms input impedance and a sensitivity of 200µV for a 2V output, there was plenty of gain with an extremely low perceived noise-floor. Every LP was treated to a definitive reading, as the magic of the RG-8 Gold was allowed full expression. The tonal balance was always reasonably neutral in perspective. At times there were hints of a romantic blush through the midrange; but, over the long haul, I convinced myself that this was not an inherent characteristic of the Jadis. Of course, it’s possible to sweeten or romanticize the sound of the JP-80MC with an infusion of romantic tube types. The Telefunken 12AX7 certainly served to romanticize the mids, but in the end I stayed with the original tube complement.

The JP-80MC was easily able to match the awesome dynamic range of its little brother, the JPL. If anything, dynamic bloom from soft to loud—the music’s microdynamics—was rendered with greater panache. Textures were just a bit smoother through the JP-80MC—more velvety, if you will—so that the bloom of instrumental outlines was more vivid. With the JPL, it was like trying to smell a rose from a foot away; with the grand JP-80MC, I was only an inch away, the petals almost brushing against my nostrils. From my experience, only tubes come close to capturing the full harmonic bloom of musical instruments—especially the take-off of the harmonic envelope as an instrument revs-up to even a moderate volume level. This is an area where the listener’s exposure to live music becomes essential. Otherwise, the more or less static reproduction of solid-state preamps is accepted as equivalent to the impact of the real thing.

The year’s worth of experience with the JP-80MC has led to its timbral accuracy being indelibly etched in my memory. From the soulful depths of Janos Starker’s cello artistry (eg. Dvořák’s Cello Concerto, EMI 53417) to the soaring heights of a violin solo or a world-class soprano, the Jadis consistently impressed me with its harmonic rightness. From the bass registers to the upper reaches of the treble, textures were woven with fantastically effective musical strokes to produce a tempered alloy of velvety softness and brassy hardness.

**Measurements from Tjn**

The JP-80MC’s output impedance at its line output measured just under 1k ohms, and varied little with the setting of the volume controls. The line-level input impedance measured 54.7k ohms (L) and 57k ohms (R); these values were also quite consistent with variations of the volume controls. The moving-magnet phono-input impedance measured 47.3k ohms (L) and 48k ohms (R), the moving-coil 1.2k ohms (L) and 1.1k ohms (R). The output impedance at the tape output was 1k ohms with a 25 ohm source impedance, and just under 1.6k ohms with a 600 ohm source impedance, indicating no active buffering at the tape output, just a series resistor.

The DC offset at the JP-80MC’s output was rather unstable, but was generally below 11.2mA (L) and 6.5mA (R). The JP-80MC is non-inverting from the line input to the line output; the MM phono-stage was also non-inverting. Line-stage gain (aux input to line output) measured 19.7dB. The gain of the moving-magnet phono-stage measured at the tape output was 35dB, the moving-coil, 59.3dB—both good figures. The tracking of the ganged volume controls was outstanding, varying only a few hundredths of a dB across the range.

The JP-80MC’s frequency response is shown in fig.1. The only significant variation is in the moving-coil RIAA response, with an approximately 1.3dB gain mismatch between the channels across the range. The crosstalk of the JP-80MC is shown in figs.2 & 3 for line and phono inputs, respectively. While we have measured better results, the separation here is more than adequate for good audible performance.

The phono section THD+Noise is plotted in fig.4. As expected, the MC distortion is higher than the MM—some of which is likely due to noise. To minimize the effect of the noise, these readings were made at a high input level: 80mV for MM, 3.5mV for MC. This explains the rise in distortion at ultrasonic frequencies visible in the phono-stage curves. This shouldn’t be a matter of concern at normal input levels.

The THD+Noise for the line input (fig.5) was taken with an input of 500mV. Again, this level was chosen to minimize
IITMOOMI

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

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"Most effective subwoofer we have tested... Best Buy!" — Julian Hirsch, Stereo Review 3/92

"Bass extension was truly remarkable!" — Robert Deutsch, Stereophile, Vol. 15 No. 4, April 1992

"Delivered clean low bass at high levels... work just splendidly!" — David Marko, Speaker Builder 1/92

"Some of the most impressive subwoofers I've heard..." — Peter Mitchell, Stereophile, Vol. 14 No. 2, March 1991

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the effect of noise on the reading. The rise in distortion at high frequencies for the line input—taken with the volume control on full—appears to be originating after this control. This was confirmed by taking another reading, this time with the volume reduced to provide unity gain. As you can see, the HF distortion drops dramatically in the latter circumstance (though the level of THD+N is generally higher here due to noise). I should also note that increasing the input level to 1V further decreases the low- and mid-frequency line-level THD+N reading, but with further degradation in the HF results. In practice, however, the JP-80MC is unlikely to be operated at full gain.

Finally, the JP-80MC would accept a signal level of 4.75V at its aux input before reaching 1% THD+N (giving an extra frequency of 46V at 1kHz). A plot of the overall output voltage vs THD+N is shown in Fig. 6. The JP-80MC’s moving-magnet phono overload margin was excellent, 1% THD+N was reached at an input of 550mV at 1kHz, 1.3V at 20kHz, and 64mV at 20Hz. The corresponding MC figures were 27mV at 1kHz, 47mV at 20kHz, and 6.7mV at 20Hz. The input for the latter measurements was unequalized; the variation of overload margin with frequency is due to the characteristics of the RIAA curve.

There were no surprises in the JP-80MC’s test-bench results. Its line-level overload at high frequencies shouldn’t be a problem at normal settings of the level control. About the only criticism I can make is of the MC stage’s channel imbalance. This could be a sample fault, but at this price I would be less than tolerant of such variations. Still, the Jadis’s overall test-bench results are competent.

—Thomas J. Norton

FINAL THOUGHTS FROM DO

Just how good is the Jadis JP-80MC preamplifier? The answer to this question carries with it potential consequences much greater than simply shifting the pecking order in PreampLand. Victor Goldstein was apparently despondent over my 1993 review of the JA 200 power amplifier. Well, Victor, I don’t know of a more divine full-function preamplifier in this galaxy than the JP-80MC. It easily surpasses the CAT preamp I lived with some time ago—but then I haven’t lived with its Signature version of that feline phenom. [JS compares the Jadis with the CAT Signature in this issue’s Follow-Up section.—Ed.]

In my experience, the JP-80MC is unexcelled for vinyl playback. It strips the mechanical and electronic glaze that permeates solid-state phono-preamp reproduction of musical textures. The fact that it accomplishes all of this with image palpability and dynamic bloom that transistors can only dream of, and transient speed and control matched by only the best solid-state gear—but without overly softening textures or fuzzing over the soundstage—is what separates it from a host of "me-too" tubed preamps.

Taken on its own, the line-level stage of the JP-80MC doesn’t sound as suave or as romantic through the mids as that of the Air Tight ATC-2. Neither does the Jadis possess the startling soundstage transparency of the Sonic Frontiers SFL-2. Jadis’s own JPL sounds a bit more mechanical, while the JPL’s bass is a bit more solid-state in character. One thing is certain: there isn’t a more natural-sounding line-level stage out there. Ultimately, the final choice will be made on the basis of personal preference and system-matching considerations.

To my mind, it will be the music-lover — more than the audiophile in search of sonic thrills—who will be captivated by the JP-80MC. If you fail to hear the JP-80MC’s Siren Song, check your pulse—you might be musically dead. Jadis has made a bold statement with the JP-80MC that I’m sure will withstand the test of time. This Jadis is the premier preamp of the ’90s.

—Dick Olsher $3


106

WorldRadioHistory

Stereophile, September 1994
**Oracle Mentor Monitor & Mentor Studio Loudspeakers**

Jack English


When the digital juggernaut began gaining steam, it didn’t take a rocket scientist to realize that companies like Oracle, whose livelihoods depended solely on analog-related products—turntables, tonearms, and cartridges—were in serious jeopardy. Oracle opted to diversify, announcing this decision a couple of years back with the release of their $10,000 Helicon speakers.

The decision has apparently been effective. Oracle now offers five complete speaker systems, ranging from the Mentor Monitor (also used as the satellite portion of the Mentor Studio) to the top-of-the-line Helicons. The Mentor Studio sits right in the middle of the Oracle speaker lineup.

The Oracle Mentor Studio system is similar in concept to the wonderful, ever-popular Wilson WATT/Puppy. The Mentor Monitors are analogous to the WATT’s themselves, and the Mentor Subwoofers are much like the Puppies. A prospective purchaser could begin with the Mentor Monitors, which come with their own polished granite floor isolators (bases) and stands. The same cut-stone base is used for the Monitor and the Studio. The stands can be traded in, at almost full credit, when the purchaser adds the Mentor Subwoofers, which then (like the Puppies) become the stands for the Mentor Monitors. The complete package—granite bases, Mentor Subwoofers, and Monitor satellites—is called the Oracle Mentor Studio.

The size of the completed system, again like the Wilsons, is small, so it should be visually acceptable in most listening rooms, and ideal where space is at a premium. It’s also available in many different finishes, so it should satisfy even the most finicky potential purchaser. My review samples had the stock finish: textured black satellites, and a black sock covering the front and sides of the subwoofers, with molded granite bases. A small, vertical, black acrylic strip on bases and subwoofers ties the package together visually.

The base of the diminutive satellite is 7" wide by 12" deep, and the smaller top is 5.5" by 10.5". The inner side of each mirror-imaged pair is vertical (14" high); all other surfaces are angled to varying degrees to minimize standing waves from parallel surfaces. The outer side slopes inward to the greatest degree, so the speakers look as if they’re leaning inward and pointing upward. The front baffle is covered with a black felt material. A gray plate with six Sorbothane discs affixed to top and bottom is placed between the top of the subs and the bottom of the satellites.

The subwoofer is similar in shape to the satellite, but larger: 22" high, 14" by 10" at the base, and 7.5" by 12" at the top. They are spiked to the granite bases, which, in turn, are spiked to the floor. Completely assembled, the speaker is still under 40" tall, and only 10" across at the widest point.

The satellite’s tweeter and midrange/woofer drivers are front-firing; the subwoofer drivers and ports, and the ports in the satellites, fire to the rear. Satellites and subs have direct five-way binding posts for bi-amping, with two more sets of terminals located on the subwoofer.

**Review Context**

The entire system can be driven with a single amp, bi-wired (in two different ways), or bi-amped. Jumpers are supplied to facilitate operation with a single amp. For this review I tried a single amp on the satellites, a single amp with one set of speaker cables on the full system using jumpers, and both bi-wiring options. As expected, the bi-wired alternatives sounded superior to the jumpered full system, which was, in turn, significantly superior to the satellites alone.

Equipment used during the listening sessions included amplifiers from VAC, ARC, Conrad-Johnson, and Krell; preamps from CAT, Melos, and MPA; cartridges from Benz, Koetsu, and Transfiguration; wire from NBS and Magnan;
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digital front-ends from Mark Levinson and Sonic Frontiers; analog front-ends from Versa Dynamics and SME; and accessories from Audio Power, Tice, Arcici, Goldmund, and Shun Mook.

INITIAL SETUP
I began with the Oracles a third of the way into the room and well away from the side walls, with the grillecloths on—they're fastened magnetically to the front of the satellites and the rear of the subs. After I became familiar with them in this configuration, I toed them in directly at the listening position, at which location I found them too bright and thin. The soundstage was also consistently below eye level. Aimed straight ahead, they had better depth, more mid bass fullness, and more precise placement of performers on a larger stage. However, there was also a loss of spaciousness, although the stage itself was up at eye level, with a greater sense of stage height.

After removing the grilles and trying both positions again, I still preferred the presentation with the speakers aimed directly ahead. With the grilles removed in this configuration, the treble extension was restored, with no loss to the speakers' soundstaging ability.

SOUND
After settling on this position, I listened extensively to the satellites alone, and to the full-range system. While the subs never added subterranean bass, they significantly improved the speakers' bottom-end performance. Despite the manufacturer's stated claim that only 5Hz of additional extension is provided at the -2dB point (down from 55Hz to 50Hz with the sub), I found the bass so much better with the subs that I didn't have any remaining listening with the full-range system. Even so, the bass seemed to begin to drop off before the lowest note of the bass guitar (41.2Hz), and was barely audible on some kickdrum and organ notes (below 40Hz).

Throughout this period, the character of the speakers changed as they broke-in: the mid- and upper bass filled out, and the overall performance became smoother, more musical, and less mechanical. A good example was Ray Lynch's CD, Nothing Above My Shoulders but the Evenings (Windham Hill 01934-11133-2): In my early listening, the music was not sufficiently relaxing or mellow—it was a bit too thin, too bright, and too discontinuous. Over time, it became much more relaxing and satisfying—as it should be. The subwoofers, in particular, seemed to play more effortlessly.

Since the subs crossed-over at 100Hz, I expected them to extend deep into the bottom octave. They didn't; but Oracle, to their credit, never claimed that they would. On such recordings as organist Hans Otto's The Grand Silbermann Organ in the Freiberg Cathedral (Denon C377-7004), or Roger Waters' Amused to Death (Columbia CK 53196), it became immediately apparent that the deepest bass was missing in action—the Studio just wasn't designed to reproduce it. But after a thorough break-in, they were lovely in the mid- and upper-bass regions, where everything was clean, quick, and adequately powerful.

The driving rhythms and musical foundations were first-rate on such recordings as John Hiatt's Perfectly Good Guitar (A&M 31454) and the Sheila Jordan/Harvie Swartz collaboration for M*A Recordings, Songs from Within (M014A). Reproduction through the critical upper bass and lower midrange provided the organ with a believable, albeit slightly lightweight, character on both the Hans Otto disc and on Arvo Pärt's Berliner Messe (Koch 3-7177-2-H1). On most music, the tradeoffs made by Oracle were eminently sensible. The smaller woofer was quick and clean, blending seamlessly with the satellites at the expense of true deep-bass reproduction.

When driven to very loud levels, the Oracles' mid-upper-bass dynamics were compressed on peaks, and there was a loss of overall articulation. I became aware of this while listening to Cracker's eponymous debut album (Virgin V21Y-86264) at realistically high levels. This loudness limitation was most prevalent with loud electric bass lines, but was easily circumvented with lower volume settings.

The middle frequencies also illustrated the careful design considerations that have gone into the Oracle. The mids were neither too fat, nor thin or etched. The Oracles gracefully played a middle ground just slightly toward the clear/thin side of neutral. As such, they rarely drew attention to themselves. Voices, in particular, were natural and uncolored, as demonstrated from sources as diverse as Pärt's choir to Hiatt's gravelly texture to Jordan's musings. Everything in this critical range was quick and clean.

Once the system was properly set up, the highs appropriately completed the tonal picture: extended, grain-free, and open. The upper overtones of Midori's violin on Live at Carnegie Hall (Sony SK 46742) were lusciously sweet and pure. Cymbals were quick and clean, with natural transient crashes and delicate, shimmering decays.

The Monitors were coherent in character from top to bottom, with no obvious discontinuities as long as they weren't pushed too severely. At reasonable volumes, everything was quick, clean, and open. Detail resolution was very good, and no sounds were obscured or lowered in overall level. This combination of characteristics helped convey the appropriate sounds of various instruments, such as the clearly percussive nature of the piano and the windpipe construction of large organs. The resolving power of the Oracles was particularly rewarding with music containing a tapestry of sounds, such as Jorge Reyes's Bajo el Sol Jaguar (Paraíso/Exilo 1991).

The Monitor's soundstage was always far away (ie, my seat was well back of mid-hall). The stage itself was very wide and the depth layering was good, but not outstanding. Nevertheless, the sound was open and spacious. The Oracles were occasionally unanny in the way they allowed me to feel as if I were attending a live concert. A great example was the five-LP set of Laurie Anderson's United States Live (Warner Bros. 25192). I listened to this complete set many times through the Oracles and loved it every time.

The speakers did a wonderful job of re-creating black space—of leaving areas empty that should be empty. The Oracles clearly revealed differences in recording quality, and did a wonderful job with well-recorded pieces of music (eg, the Pärt recording) of re-creating the original recording venues.

The performers themselves never wandered about the stage, nor were their locations ever vague; but their placement lacked the pinpoint precision I've heard with some other speakers. This was equally true of the QSound effects on Roger Waters' Amused to Death—things were just not precisely focused in space. In addition, the performers, while never cardboard cutouts, lacked the three-dimensional palpability I've heard with some other speakers. The performers were always there, but never in my room with me—I was always observing from a distance. A good example was the Cracker album. Many other speakers have allowed these guys to take over my listening room; with the Oracles, I sat back in the hall and listened—they were surrounded with space, and separated within space from one another and me.

On the other hand, sometimes there was a hollowness to the sound of the Oracles. It was as if I was hearing a live performance through an open window or tunnel, as opposed to being in the hall. This coloration, which struck me as
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being related to the speaker’s distant presentation, was most apparent in the lower-midrange/upper-bass region on live recordings, such as Lambert, Hendricks, and Bavari’s Basin Street East (RCA LSP-26350), or the Laurie Anderson set. The more prevalent the upper-bass content, the more obvious the coloration.

Relative to any number of other speakers I’ve listened to extensively, the Oracles required a reasonable amount of power to reach acceptable levels. They were somewhat restricted dynamically—unable to consistently and effortlessly re-create big volume peaks in the music—and, at very loud levels, they had a tendency to become slightly hard.

MEASUREMENTS FROM JA

The Studio Mentor doesn’t need much drive to go reasonably loud, its B-weighted sensitivity weighting in at an estimated 86.5dB/W/m. This is lower than the specification, however. Its impedance (fig.1) is moderately demanding, averaging 4 ohms and reaching a minimum value of 2.7 ohms in the mid-treble. Classic tube amplifiers needn’t apply for the job.

Looking first at the Mentor Subwoofer, fig.2 shows the individual responses of its drive-unit and port, measured with the tip of the microphone as close as possible to the radiating surfaces. The woofer output can be seen to peak at 95Hz, rolling out gently above and below that frequency to reach its minimum-motion point at 33Hz—the port tuning frequency. The port’s bandwidth correspondingly peaks at 33Hz, but it’s significantly down in level. Peaks in its output can be seen at 350Hz, 420Hz, and 890Hz, suggesting the presence of resonances of various kinds, but these are both low in level and will be further suppressed by the fact that the port is mounted on the unit’s rear.

Summing the outputs of the port and the drive-unit, weighted in the ratio of their diameters, gives the top curve in fig.2, intended to show the predicted anechoic response of the Mentor Subwoofer. Again, this peaks between 90Hz and 100Hz, reaching its −6dB point at a highish 45Hz. This unit really should be called a “woofer” rather than a subwoofer. The low-pass crossover rolloff slope appears to be just a little steeper than first-order.

Turning to the Mentor Monitor satellite, fig.3 shows the nearfield responses of its woofer and port, their overall sum, and the response on the tweeter axis at 45°, averaged across a 30° horizontal window. The notch at 48Hz in the woofer’s response and the peak in that of the port at the same frequency indicate the port tuning frequency. The overall responses show just a slight rise to reach a maximum output at 55Hz, with then the usual steep reflex rollout. This is reasonably good bass extension for such a small speaker. Note, however, the severe midrange peaks in the port output, due to resonances. It’s a good thing the port is on the speaker’s backside; otherwise, these peaks might color the sound. Still, they might be contributing to the “hollowness” JE noted at high levels.

Higher in frequency, as I expected from reading JE’s auditioning notes, the treble is impressively flat, with only small peaks and dips apparent. The midrange, however, is rather shelved-down, which should make the balance sound slightly lean. JE did note that “the Oracles gracefully played a middle ground just slightly toward the clear/thin side of neutral.”

Fig.4 reveals how the Monitor’s balance changes to its sides. (The changes to the sloped, outside edge of the enclosure are shown to the front.) Note that only the changes are shown in this graph, which means that the on-axis response appears to be a straight-line—this does not mean that the speaker actually has a flat response. As with all minimonitors, the Monitor Monitor’s balance changes very little until the listener gets well off-axis. Vertically (fig.5), the speaker is more fussy. Significant suckouts centered on 2.4kHz—presumably the satellite’s crossover frequency—develop 5° or more above the tweeter axis and more than 10° below it. With the tweeter axis lying 35° above the ground—once the depths of the spikes, granite base, and the plate that goes between the units have been taken into account—it won’t be hard for the listener to arrange for his or her ears to be at or slightly below this height. Director’s chairs are out, however.

In fig.6, I’ve attempted to show how the outputs of the satellite and woofer integrate. The main curve is the overall satellite response from fig.3—curiously, it doesn’t appear to be high-pass filtered when fed by the appropriate terminals on the subwoofer—with then the Mentor Subwoofer response from fig.2 rep-
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The Oracle Mentor Monitor, vertical response family at 45°, normalized to response on tweeter axis, from back to front: differences in response 45°–55° above tweeter axis; reference response; differences in response 5°–45° below tweeter axis.

Fig.5 Oracle Mentor Monitor, vertical response family at 45°, normalized to response on tweeter axis, from back to front: differences in response 45°–55° above tweeter axis; reference response; differences in response 5°–45° below tweeter axis.

Fig.8 Oracle Mentor Monitor, cumulative spectral-decay plot at 45° (0.15ms risetime).

Fig.9 Oracle Mentor Monitor, cumulative spectral-decay plot of accelerometer output fastened to center of enclosure side panel. (MLS driving voltage to speaker, 7.55V, measurement bandwidth 2kHz.)

of the Mentor Monitor’s enclosure, and its internal bracing, push up the frequencies of any cabinet resonances into a region where they will be less subjectively problematic. Fig.9 shows that the only significant mode that I could detect lies at a very high, and probably innocuous, 600Hz.

JE SUMS UP
The Oracle Mentor Studio loudspeaker is a solid product from a company best known for its successful 15-year history with turntables. The speaker’s unique upgrade policy, small footprint, modest size, and unique shape give it a special niche in the marketplace. While it had shortcomings in deep-bass reproduction and ultimate dynamic capability, the Mentor Studio was faithful to the music.

———John Atkinson

———Jack English

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Is MiniDisc for audiophiles? That depends on your perspective. On one hand, it would be easy to dismiss Sony's new wonder technology as a step backwards because of its lower sound quality compared to CD.

The sonic compromises necessary to provide 74 minutes of music on a 2.5" recordable digital disc may strike some as too big a price to pay. Conversely, MD could be viewed as a huge advance in sound quality, functionality, and convenience when considered in relation to the format it's intended to replace: the analog cassette.

When I lived in Southern California, I spent a lot of time listening to analog cassette during my long commute to work. I've grown to know the format intimately, and learned to suffer through its shortcomings—among them wow and flutter, tape hiss, Dolby miscalibration, high-frequency loss due to azimuth misalignment, and the relative fragility of a thin tape in a plastic shell.

With MiniDisc, Sony is attempting to bring the personal portable aspects of the analog cassette into the digital age. They believe that it's time to leave behind the 30-year-old cassette technology—never intended to be a music carrier in the first place—and in the process sell shiploads of hardware and software to a generation weaned on the convenience of the compact disc.

I therefore approached this review not from the standpoint of whether MD advances the state of the art of music reproduction (it doesn't), but to determine if MD is a worthwhile alternative to analog cassette and portable CD players for music on the go. To this end, I replaced my home cassette deck and cassette-based portable music systems with Sony's MDS-501 home MD recorder and MZ-E2 portable MD player, using MD just as I have used analog cassette. As an audiophile, but also as someone who likes music when he travels, I was eager to explore the virtues and verities of this potentially exciting new music-carrier.

**MINIDISC TECHNOLOGY**

A MiniDisc looks remarkably similar to the 3.5" computer diskette. Both are mounted in a plastic caddy, which has a sliding cover to protect the disc. The MD, however, is only 2.5" in diameter, and functions very differently from its computer cousin.

MDs come in three varieties: prerecorded, recordable, and hybrids that combine a prerecorded section with user-recordable areas. Prerecorded MDs are identical to CDs in their pit structure, reading mechanism, disc rotational speed, servo systems, data format, and other important attributes. Both CD and prerecorded MD are purely optical formats, reflecting a laser beam back to a photodetector to recover the data encoded in pits and land on the disc surface. The prerecorded MD is essentially a miniature CD housed in a plastic shell. As alluded to in the introduction, however, the data representing the music stored on MD have been subjected to low-bit-rate or perceptual coding to reduce the number of bits required to represent the audio signal. Consequently, the sound quality of MD is lower than that of CD. I'll report later in this review on how much lower.

While prerecorded MD is similar in many ways to CD, recordable MD operates on the very different principle of magneto-optics (MO). As its name implies, magneto-optical recording and playback involve a combination of magnetic and optical techniques. In magneto-optical discs, data are encoded magnetically in the north-south orientation of magnetic particles—just as on standard recording tape or discs. But instead of using only a magnetic head to read and write data, magneto-optical recorders/players use a combination of a magnetic head and a laser beam.

To understand magneto-optical recording, you need to know an important fact about how magnetism behaves: A magnetic material's resistance to becoming magnetized (a property called *coercivity*) drops dramatically when the magnetic material is heated. Once a certain temperature threshold (called the *Curie point*) is exceeded, the media can be magnetized by a very weak field.

The magnetic particles on a recordable MD are arranged vertically on the disc—like trees in a forest. As the disc spins, a tiny laser beam strikes the disc, heating the magnetic material to the point where it's very easily magnetized. The digital data we want to record are input to a magnetic head adjacent to the laser beam. The magnetism generated by the head changes the magnetic orientation of particles on the media, but only where the laser beam has just heated the disc. The magnetic field is so weak that adjacent areas are unaffected by the head's magnetism. Consequently, magneto-optical recording can create extremely small magnetic features on the disc.

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magnetic fields recorded on the medium. As the beam passes through the magnetic field, the light’s polarization plane is rotated—a north–south magnetic orientation causes a very slight rotation in one direction, a south–north magnetic orientation causes a rotation in the opposite direction. The reflected beam goes through a polarizing beam-splitter, which allows only one polarization to pass. This polarized light strikes a photodetector, which converts the light into an electrical signal. The photodetector output is thus the original data recorded on the disc.

This method is so accurate that magnetic-optical recording is often used for high-reliability computer data storage where bit-for-bit accuracy is essential. Further, MO discs can be re-recorded literally millions of times. Sony already has firm plans to introduce MD Data for computer data storage. One MD Data disk will be able to store 128MB—more than the combined storage capacity of 90 high-density 3.5" floppies.

Surprisingly, the same laser pickup mechanism used for MO recording works when playing prerecorded optical MDs. Moreover, MD represents a breakthrough in MO technology in that a disc can be re-recorded without the need for two passes—one to erase and one to record—or a second, erase laser. This "direct overwrite" ability is unique to MD—and essential to making MD recorders cost-effective and convenient to use.

MiniDisc’s great convenience, small size, and long playing time come at a price. Rather than using 705,000 bits/second/channel, as does linear coding (such as in CD), MD uses only 128,000 bits/second/channel. This technique, known alternately as "data compression," "low-bit-rate coding," or "perceptual coding," throws out information judged to be inaudible. The very high distortion created by encoding the music with so few bits is presumably "masked" (hidden) by the correctly coded music signal.

The compression algorithm used in MD is called Adaptive Transform Acoustic Coding, or ATRAC. Sony doesn’t claim that ATRAC-coded audio sounds as good as CD, but they maintain that it’s good enough for portable applications, and that it produces a sound quality far better than that of analog cassette. Moreover, Sony suggests that the ATRAC algorithm will continually improve in sonic performance as the technology (and our knowledge of psychoacoustics) matures. And don’t worry; Sony vehemently expresses their position that MD is no replacement for the higher-quality CD. They envision the CD for home use, and MD for portable applications.

In addition to the MD’s greater portability for on-the-go music, it provides skip-free playback—even when shaken. Because of the ATRAC data compression, data can be read from the disc four times faster than is necessary for playback. Consequently, the data recovered from the disc are input to a three-second buffer memory. Even if the beam is shaken off the track, it has plenty of time to begin reading again and fill up the buffer. An address system, similar to that used in CD-ROM, identifies disc locations so that the laser can begin reading exactly where it left off. Note that this buffer memory is of no use during recording; any movement of the record laser and magnetic record head in relation to the disc will ruin the recording. If you’re planning on any location recording, Digital Audio Tape (DAT) is a much better choice than MD.

The MD’s optical nature confers all the advantages of optical-disc recording and playback—primarily instant access and no wear. Its sophisticated technology makes analog tape seem antiquated. For example, say you want to replace a four-minute track—recorded as track 2 on the disc—with a seven-minute track. The MD recorder will automatically record the first four minutes of the seven-minute track on the disc location where the original track 2 was, then record the additional three minutes somewhere else on the disc. On playback, the laser jumps to the second location, providing seamless playback even though the audio data are fragmented on the medium. And if you want to "erase" everything on a disc, the push of a single button accomplishes this instantly—it merely erases the disc’s table of contents.

**MD Software & Blank Discs**

MiniDisc was developed to counter the declining sales of analog cassette, which peaked in the late 1980s. MD’s targeted audience is 16–29-year-olds who have traditionally bought cassettes.

One problem with this marketing strategy is the vastly higher price of MD compared to cassette—both in hardware and software. Cassette was popular because it was portable and cheap. With prerecorded MDs selling for the same price as CDs (sometimes $1 less for the same title on MD), Sony may have priced themselves out of the market. Moreover, blank MDs cost $13.99 for a 60-minute disc, and $16.99 for a 74-minute disc (list prices for Sony’s blanks). That’s a far cry from $4 for a premium-quality 90-minute blank cassette.

To date, about 400 MD titles are available. Twenty-two labels have signed on as licensees, although only a few are producing MDs. The budget classical label Naxos has issued some MDs that sell for $6–$7 on the street. Just as I’ve never bought a single prerecorded analog cassette, I can’t see the purpose of buying prerecorded MD. If you want music in the MD format, buy the CD or LP and make your own MD. That way you’ll have the high-quality format for home playback and the MD for portable use.

**DCC?**

And what about MD’s competition for the cassette-replacement market, Philips’s Digital Compact Cassette (DCC)? Although DCC offers better sound quality than MD, its tape-based format is, in my view, a fatal flaw. After making and playing recordings on both the Marantz DD-92 DCC machine and the MDS-501, I found the DCC machine clumsy, slow, and awkward. As for the survival of either or both formats, I’d put my money on MD. There are indications that DCC may already be dead: stores that once sold prerecorded DCC no longer carry them, and DCC machines are being sold at blowout prices in catalogs. Conversely, Sony has just launched a massive promotional campaign for MD. The June 30, 1994 issue of Rolling Stone included an MD sampler with each subscription copy—amounting to more than a million free MD samples. Moreover, Sony seems more likely to continue investing in MD for as long as it takes. This is still, however, no guarantee that MD will succeed in the market.
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three-head machine with automatic bias fine-tuning and Dolby-B noise-reduction. Headphones for the MZ-E2 were the supplied Sony 'phones, and also a pair of Grado SR60s. I'll add my voice to CG's praise of the SR60s—these are great headphones by any standards. For $69, they're a steal.

**MDS-501 Recorder/Player**

The MDS-501 is a slim, black-faced unit that looks much like a CD player; but instead of a drawer mechanism, the MDS-501 has a tiny slot into which the MD is inserted. A display shows all the usual information we've grown used to with CD (track number, track time, remaining time, etc.), and a pair of LED meters shows the recording level, with red lights indicating when the overload margin has been exceeded. Tracks can be searched by turning a front-panel knob, marked AMS; the detented knob increments or decrements one track for each detent—a search method I found quick and easy. A flip-down panel conceals the input level control (used only when recording from analog sources). The panel also covers buttons that provide audible search forward and backward. The rear panel has a stereo pair of analog inputs, analog outputs, and digital input and output via TosLink jacks. All MD recorders, including the MDS-501, are equipped with Serial Copy Management System (SCMS), a scheme that prevents second-generation copies of MDs. For example, you can make a digital-to-digital dub of a CD to MD, but that MD can't be used as a source for another MD-to-MD transfer (in the digital domain). Of course, SCMS cannot be invoked when copying through the player's and recorder's analog jacks.

The MDS-501 has two recording modes: one to record over existing tracks, and one to add to a previously recorded disc. In the second mode, merely inserting the disc and pressing the record button automatically "sees" the disc to begin recording at the correct location—no rewinding and fast-forwarding to find the end of the last track to begin recording again. Track numbering automatically picks up where the previous last track left off. Track numbers are automatically inserted between musical selections, or the user can increment the track number by pressing the "record" button while recording.

The MD format provides many more sophisticated programming features: the track numbering can be changed after a disc has been recorded; certain areas of the disc can be identified and ignored on playback; and the track order can be changed. Note that these changes are written in the disc's table of contents and are invoked every time the disc is played. Undoing the changes, or making other changes to the disc's programming, is simply a matter of re-creating the disc's table of contents. Every time the disc is ejected after making a recording, the machine updates the disc's table of contents to reflect the new track and time information. Finally, the recordable MD can be labeled with alphanumeric characters that appear in the display window; prerecorded MDs have this information already encoded on the disc.

I was shocked after removing the MDS-501's top cover; the entire encoding, decoding, control, and logic circuits for this sophisticated MO recorder are on one 3" by 7" printed circuit board. Moreover, the board contains just two surface-mount chips, along with support circuitry. The degree of integration in the MDS-501 is astonishing for a second-generation product. This suggests that future MD recorders may be much cheaper than the $1000 MDS-501; dense integration means high up-front costs, but much lower ones when the chips are made in large quantities.

The power supply and analog input/output circuits are on the same PCB near the unit's rear. The supply has five regulation stages, but, as you'd expect, the parts quality is mid-fi standard. The most complex board in the entire unit is the front-panel display and control board, which runs vertically along the unit's front.

**Sound:** On a functional level, I am in great admiration of the MD format. If you're used to recording on cassettes for the car or Walkman, MiniDisc is a revelation. The instant and automatic location of the end of the last recorded track when the machine is put into record, the no flipping-over of a tape, the automatic track numbering, and the instant random access throw into sharp relief the analog
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cassette's severe functional limitations. Even before any serious listening, I loved the MD format's case of use and sophisticated features.

The first listening comparison I made was between a CD, and an MD recorded from that CD through the digital input port. On playback, the Theta Data Basic transport fed an Adcom GDA-600 processor through a WonderLink AES/EBU cable, and the MDS-501 drove the Adcom processor via TosLink. Comparing the two was simply a matter of switching the Adcom's digital input selector.7

The MD made from a CD sounded different in several respects. First, the CD's tonal balance was warmer, fuller, and richer; the MD tended to sound thinner, drier, and more forward in the mids, and the bass was less well-defined—more woolly, though thinner. The MD's extreme bottom end wasn't as powerful as that of the CD, thus taking away some of the music's dynamic power. For example, the bass-drum whacks on Tritico (Reference RR-52CD) were less powerful and dynamic from MD. In addition, the overall dynamic contrast was reduced. Consequently, the orchestra's feeling of physical force and power was reduced from MD compared to CD.

On rock, blues, and jazz, the MD's sense of pace and rhythm was reduced. It was harder to follow the bass line, and the feeling of physical propulsion on the beat was reduced. "Diluted" perfectly describes the lessened rhythmic energy from MD.

The MD's treble was drier and more forward, giving it a slightly synthetic quality; the extreme treble was a little closed-in—a characteristic that made the presentation lose some of its air and extension. Vocal sibilants ('s" and "ch" sounds) were softer from the MD, but at the expense of making the presentation less open and alive.

The mids were also affected by ATRAC coding, sounding a little synthetic rather than liquid. The brass on Tritico was overlaid with a trace of grain reminiscent of a kazoo. I'm not saying they sounded like a kazoo—that would be a gross exaggeration—but, compared to the CD, there was a bit of coarseness overlaying the timbres.

Note that all these degradations are the result of ATRAC coding; the transfer to MD was made in the digital domain, and the same D/A converter was used to convert both sources to analog. To put the magnitude of these flaws into perspective, the difference between CD and MD was like the difference between a Class B processor/transport combination and a Class D CD player—the MD was listenable, but not superlative.

In fact, comparing the MDS-501's D/A section to the Adcom GDA-600 indicated that there was more of a difference between these two D/A converters than was introduced by ATRAC. The MDS-501's D/A was bright, thin, and grainy; the treble moved farther forward, and took on a drier sound; soundstaging lacked air and depth; and individual images tended to fuse together. The air and space around instrumental images collapsed (the Tritico disc mentioned earlier is a perfect test for discovering this degradation), and the soundstage depth was foreshortened. The snare drum was closer to the soundstage front, rather than sounding distant and enveloped in space. The '50's relatively poor-sounding D/A section is not, however, a significant shortcoming; most readers of this magazine, at least, would use the MDS-501 only to record discs for portable use, and never play MD at home.

Next, I recorded MD from LP through the MDS-501's analog inputs to assess the MD recorder's A/D converter stage. The analog front-end was a Well-Tempered Turntable with Lary Pederson-modified Arm, fitted with an AudioQuest AQ7000nsx. The phono stage was a Vendetta Research SCP2B. I listened to these analog-sourced MDs through the GDA-600 and the MDS-501's D/A stage. The sonic characteristics imposed by the MDS-501's A/D section were nearly identical to those introduced by the D/A described in the previous paragraph, but to a greater extent.

I must stress that the MDS-501's converters are part of a sophisticated magneto-optical recorder that sells for $1000 and aren't meant to advance the state of the art in digital conversion. They are, however, adequate for making discs for portable use. Further, I expect most users will make CD-to-MD copies in the digital domain, bypassing the MDS-501's A/D converters.

Finally, I compared a prerecorded MD with the same performance on CD: Sibelius's Dance Intemesso, with the Gothenburg Symphony conducted by Ncme Järvi (Bis CD-610 and MD-610). I have no idea if the CD and MD were made from the same source tape, so this comparison may be less valid than the impressions just reported. Nonetheless, I thought the prerecorded MD sounded closer to the CD in sound quality than the discs I'd recorded myself (with digital-to-digital transfers). I still heard an increase in treble brightness, a reduction in air in the top octave, a drier perspective, and less bloom and soundstage depth from prerecorded MD—but to a lesser extent. The professional mastering encoder probably has a more sophisticated implementation of the ATRAC algorithm than does the encoder in the MDS-501.

MZ-E2 PORTABLE PLAYER

The MZ-E2 is an amazing piece of engineering. It incorporates an MD playback mechanism (that can read both prerecorded optical MDs as well as magneto-optical MDs recorded on the MDS-501), decoding electronics, ATRAC decoding, front-panel controls, and a headphone output—all in a 7.2oz (including battery) package not much bigger than a cassette box.

The machine's top pops up to accept a disc; front-panel controls provide track skip forward and backward, play, stop, pause, and volume control. Unfortunately, no display is included on the MZ-E2 itself. Instead, the headphone cable has a tiny, round display/control unit that shows track number, track time, song title (if that information has been encoded on the MD), and other information. The display/controller also duplicates the front-panel controls, allowing you to control the player when it's tucked away. The display/controller will accept other Sony headphones, but it can't be used with headphones from other manufacturers—the Grado SR60s, for example. If you opt for better headphones, you can't tell what track you're on. The headphones included with the MZ-E2 are decent, but the SR60s are vastly better.

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lithium-ion battery that provides nearly two hours of use. A charger is included with the MZ-E2 that also functions as a DC supply, and will accept two lithium-ion batteries. To extend the battery playing time, a pack holding three AA batteries screws into the MZ-E2, providing about six hours of playing time.

I've seen the MZ-E2's subassemblies and electronics laid out on a table, and can report that the machine looks like a fifth-generation CD player rather than a second-generation product. The miniaturization of the laser pickup assembly and electronics is astounding.

Sound: The primary point of comparison for the MZ-E2's sonic performance was the famous Radio Shack Optimus CD-3400 portable CD player. This $180 wonder ($129.95 on sale) sets a standard in portable CD playback and affordability. I compared CDs played on the CD-3400 to MDs made in the digital domain played on the MZ-E2 through Grado SR60 headphones.

The MZ-E2 sounded decent, but it was no match for the CD-3400. The description earlier of MD compared to CD also applied to this comparison: treble dryness, less space and bloom, and lack of top-end air. By comparison, the Radio Shack player had more openness, air, and clarity; I heard much more detail on each recording auditioned.

Low-level sounds that were buried when played on the MZ-E2 were more easily audible in the CD-3400's higher-resolution presentation. The MZ-E2's bass was also more woolly, with less tautness and definition. Although the CD-3400 could sound a little ragged in the treble, it was still smoother than the MZ-E2's treble. Overall, the MZ-E2's sound quality was a little disappointing.

A switch on the MZ-E2's bottom panel selects between flat response and two equalization curves, marked "0," "1," and "2," respectively. The "1" and "2" positions were completely useless—the sound became bloated in the bass and horribly distorted; low frequencies lost any semblance of pitch or definition, instead degenerating into a roar.

On a functional level, I preferred the MZ-E2's smaller size of both player and discs. Carrying MDs in their plastic cases (an outer case in addition to the integral plastic caddy) was much easier than transporting and accessing CDs in a wallet-type case. The MZ-E2's lack of a display when using upgraded headphones was, however, a drawback.

Finally, I listened to the MZ-E2 through a car stereo that accepts a front-panel input, and compared the sound to both CD and cassette. Again, I found the MD forward in the treble, rolled-off in the upper treble, and lacking detail compared to the CD. The MD emphasized vocal sibilants (on the MZ-E2, but not on the MDS-501), while simultaneously sounding dull. The bass problems heard in the listening room were also apparent in the car: MD obscured detail and timbre in the bass, making the cello on Gary Sockler, Flutist (Chesky CD46) sound somewhat wooden and unnatural. The sense of air, openness, and life heard from the CD was missing from the MD.

Surprisingly, the analog cassette sounded closer to the CD than did the MD. The treble was much more naturally balanced—smoother lower treble, and what sounded like a more extended upper treble. Although I heard some treble rolloff on the cassette compared to the CD, the cassette didn't have the closed-in sound that I heard from the MD. The cassette also had much better resolution of pitch and timbre in the bass, along with greater pace. Consequently, the counterpoint between the cello and the flute on the Gary Sockler disc was better conveyed by the cassette. The cassette had a much greater sense of space and openness—the air surrounding the snare drum on Trittico was missing from the MD version, for example.

Note that the cassette was a high-quality blank (Sony UX) made on a three-head machine with bias fine-tuning, and played on a very good car deck. The results may have been different with lower-quality analog cassette (particularly a prerecorded analog cassette) or a poor playback mechanism.

Overall, the MZ-E2's sound quality was significantly lower than that of CD and the MDS-501, and somewhat lower than that of a premium-quality analog cassette. The MZ-E2 is not, however, indicative of MD's potential sound quality—the MDS-501 sounded a lot better. Future generations of portable MD may address these sonic shortcomings.

Measurements: The first part of this technical assessment of the MDS-501 and MZ-E2 relies on the standard tests that appear in all our digital processor reviews. The MDS-501 report will also include the machine's A/D converter performance.

The second section of this report will evaluate the ATRAC low-bit-rate coding algorithm used in the MD format. Judging the technical performance of low-bit-rate coders requires a completely different approach from that used in evaluating linear digital audio systems. I refer interested readers to my technical report on the Marantz DD-92 DCC machine in the July '93 Stereophile (Vol.16 No.7) for an explanation of why. Further, that review included a set of measurement data on DCC's PASC coding. I will repeat the same tests on ATRAC, making it possible for readers to directly compare the technical performance of the two low-bit-rate coders.

First, the MDS-501 had a maximum output level of 2.1V when playing a full-scale, 1kHz sinewave. Channel balance was an excellent 0.016dB. The output impedance was a highish 885 ohms at any audio frequency. The MDS-501 doesn't invert absolute polarity in the D/A or A/D stages—a positive-going impulse on the disc or at the analog input produced a positive-going pulse at the output. DC levels were a low 300µV at each channel's output. A 1V RMS input signal produced 0dBFS with the input level control at #4 (11 o'clock). The analog line-level inputs had an input impedance of 49.9k ohms (50k nominal). These measurements suggest that the MDS-501 will interface properly with virtually any audio system.

The MDS-501's frequency response was predictably flat, and the de-emphasis error was negligible (fig.1). The unit's D/A-section crosstalk is shown in the lower pair of traces in fig.2. The channel separation was a respectable 102dB at 1kHz. The crosstalk measured from analog input to analog output is shown in the upper pair of traces in fig.2. The odd peakiness in the left-channel trace indicates that the left channel's noise isn't...
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white, but has some periodic frequency components.

A spectral analysis of the MDS-501's output when the unit is decoding a
-90dB, 1kHz dithered sinewave is shown in fig.3. The noise level is moderately
low, but there's a hint of 60Hz powersupply noise. The rejection of powersupply
noise is admirable, considering that the power supply is right next to the
audio circuits on the same pcb. The same spectral analysis, but made over a wider
band and with an input of all zeros, produced the plot of fig.4. The rapid rise in
noise just above the audioband indicates that the MDS-501 uses a noise-shaping
digital filter.

The linearity plots of fig.5 show the
MDS-501's D/A-converter performance (top traces) and A/D-converter linearity
(bottom pair of traces). The worse linearity from the A/D converter is expected—DACS are generally better than ADCs. The D/A linearity
is exemplary, and among the best I've measured—owing, no doubt, to the 1-bit
D/A in the MDS-501. (Note that the D/A linearity trace has been offset by
+4dB and the A/D trace by -4dB so that
they can appear on the same graph.)

Fig.6 shows the MDS-501's reproduction of an undithered, 1kHz sinewave at
-90dB. The signal is fairly free from audioband noise, and the waveshape is
detectable. The unit's low noise level and good linearity are reflected in the noise-
modulation performance shown in fig.7. The traces are tightly grouped, the over-
all noise level low. This is excellent performance.

The MDS-501 also performed very
well on the 19+20kHz intermodulation
test. Fig.8 shows virtually no 1kHz difference component (20kHz minus 19kHz),
and very few other intermodulation products.

Overall, the MDS-501 performed well on these tests.

Moving on to assessing the ATRAC
coding scheme, I drove the MDS-501 with the test signal shown spectrally in
fig.9. What you're looking at is a signal composed of 43 equal-amplitude sine-
waves spaced equally along a linear frequency scale. I created this signal using the Audio Precision System One's Make-
wave utility, a program that lets you program the System One's DSP signal
generator with any combination of fre-
quences. The test signal had a combined amplitude of 0dBFS (full scale). We use
this unusual test signal to stress the low-
bit-rate coding algorithm; the simultane-
ous presence of many frequencies causes the encoder to run out of bits, thus
revealing the distortion added to the signal.

The way in which the signal is dis-
torted can be seen in fig.10—the test signal after ATRAC coding and decoding
(as implemented in the MDS-501). First, we can see a huge increase in the noise
floor, caused by quantization error. Low—bit-rate coders produce very high
levels of quantization error because they encode the signal with so few bits. The
trick is to hide that quantization error underneath the music signal (we'll see
this in more detail later). The second salient feature of fig.10 is the treble roll-
off; the ATRAC algorithm doesn't try to encode the signal components above
18.5kHz. Instead, it allocates those bits
to lower frequencies that are considered
more important.

Fig.11 shows the same test performed
on the PASC coding algorithm used in
DCC. We can see some marked differ-

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Fig.3 Sony MDS-501, spectrum of dithered 1kHz tone at -90.31dBFS, with noise and spuriae (½-octave analysis, right channel dashed).

Fig.4 Sony MDS-501, spectrum of silent track, 20Hz – 20kHz, with noise and spuriae (½-octave analysis, right channel dashed).

Fig.5 Sony MDS-501, departure from linearity of D/A (top) and A/D (bottom) (right channel dashed, 2dB/vertical div.).

Fig.6 Sony MDS-501, waveform of undithered 1kHz sinewave at -90.31dBFS.

Fig.7 Sony MDS-501, noise modulation, -60 to -100dBFS (10dB/vertical div.).

Fig.8 Sony MDS-501, HF intermodulation spectrum, DC–22kHz, 19+20kHz at 0dBFS (linear frequency scale, 20dB/vertical div.).

Fig.9 Spectrum of equal-amplitude, 43-tone test signal, with a combined amplitude of 0dBFS (linear frequency scale, 20dB/vertical div.).

Fig.10 Sony MDS-501, spectrum of fig.9 signal after ATRAC encoding/decoding (linear frequency scale, 20dB/vertical div.).

Fig.11 Marantz DD-92, spectrum of fig.9 signal after PASC encoding/decoding (linear frequency scale, 20dB/vertical div.).
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ences between ATRAC and PASC. First, ATRAC allows the quantization noise to increase equally at all frequencies. Conversely, PASC maintains much lower quantization error through the bass, midband, and lower treble than ATRAC. Below 2kHz, the noise produced by PASC is nearly negligible. In fact, frequencies below 700Hz are perfectly coded by PASC (that is, coded with as much information as linear coding). This means that the error spectrum with PASC is mostly high frequencies; with ATRAC, the error spectrum is much broader-band.

This is exactly what I heard when listening to the "residue" test of both coders (see Vol.16 No.10, pp.47–53). The residue test codes a music signal with the low-bit-rate coder, then subtracts the original music signal (this is performed entirely in the digital domain on a computer-based digital audio workstation). Whatever signal is left over is the distortion introduced by the low-bit-rate coder. The residue from PASC was a small amount of treble information; the residue from ATRAC had much more midrange energy, and was greater in amplitude.

These measurements and listening experiences correlate with another technique for evaluating low-bit-rate coders: the "noise-to-mask" ratio measurement reported in the January 94 Stereophile (Vol.17 No.1, pp.49–52). This sophisticated measurement device's display shows how close the noise comes to the masking threshold, above which the noise would be audible. The results of both PASC and ATRAC were shown during the demonstration. Where PASC had a large margin between the noise and its potential audibility, ATRAC was right at the limit nearly all the time. Moreover, PASC distortion was virtually all high in frequency, while the ATRAC distortion was wide-band—exactly what we saw in fig.10.

The other interesting difference between fig.10 in this report and fig.11 is PASC's failure to encode some high-frequency bands, while correctly coding signal elements higher in frequency. Conversely, ATRAC simply rolls off the treble when it runs out of bits. The latter technique would appear to make more sense; we're less sensitive to the uppermost frequencies, and most people's hearing rolls off before 20kHz anyway.

Next, the MDS-501 was driven with the much easier test signal of fig.12, which has half the number of frequency components. The signal after ATRAC is shown in fig.13, while fig.14 shows the result of PASC encoding: PASC has less error, and doesn't roll off the three uppermost frequency components.

To see how well ATRAC maintains low quantization noise in bands with no signal, I drove the MDS-501 with the signal shown in fig.15. Ideally, the noise floor shouldn't increase in the bands that have no signal energy. It's the presence of signal that masks the large increase in the noise floor we've seen in the previous graphs. Fig.16 shows how ATRAC affects this test signal. In addition to the obviously missing top group of frequency components, the quantization noise rises significantly between the signal components. For contrast, fig.17 shows virtually no increase in noise between bands for PASC encoding. Moreover, we can see in this comparison how the noise floor increases with frequency in PASC, but remains constant across the band with ATRAC.

Finally, I measured ATRAC's distortion and plotted it against the theoretical masking thresholds for 50dB and 70dB sound-pressure levels (spl). This test, shown in fig.18, attempts to reveal how far below audibility the noise is in the presence of a 50dB spl and a 70dB spl sound. The top traces are the masking curves for 50dB spl and 70dB spl, respectively; the lower trace is ATRAC's distortion. If the lower trace is below the upper trace, the distortion will, in theory, be inaudible. Moreover, this test shows how far below the masking threshold the noise lies. The greater the margin between the distortion and the masking threshold, the better. Fig.18 indicates that the noise is about 15dB below the masking threshold. For comparison, fig.19 shows that PASC has a margin of more than 25dB. The distortion curve is also steeper for ATRAC, bringing the distortion closer to the threshold of audibility.

These measurements indicate that PASC is, in my opinion, by far the better algorithm. It should be; PASC has a data rate of 196kbps/channel—50% greater than ATRAC's 128kbps/channel.
and some musically objectionable higher-order products (ninth, tenth, eleventh, and thirteenth). The products are all below -80dB, but the presence of the higher-order harmonics is cause for concern. Could these upper-order harmonics be partially responsible for the forward and dry treble, grain, and edginess heard in the auditioning?

Moving to the MZ-E2, I measured a maximum output level of 610mV across a 10k ohm load. The output impedance was a very low 0.8 ohms across the band. DC levels were 2mV and 1.8mV from the left and right channels, respectively.

The following measurements were made by recording signals from the CBS Test Disc to a blank MD, all in the digital domain (no D/A and A/D conversions). Fig.21 shows the MZ-E2's frequency response measured with the equalization switch in the three positions. The "0" position produced a flat response, with a bass rolloff (down 1.6dB at 20Hz), a slight uptilt in the treble, and a rolloff above 18kHz. The "1" position (lowermost trace) simply produces a suckout in the midrange centered on 1kHz, giving the impression of more bass and treble. The "2" position (center trace) provides a greater suckout, nearly 2dB at 1kHz. It's obvious why I did all my auditioning in the "0" position. De-emphasis error (not shown) was less than 0.1dB.

The MZ-E2's channel separation (fig.22) is unusual in that the crosstalk increases at low frequencies. This amount of crosstalk is rather high on an absolute basis, but understandable in a stereo playback unit the size of a cassette box.

The MZ-E2's output when decoding a -90dB, 1kHz dithered sinewave. The noise level is quite high, particularly between 30Hz and 500Hz. Fig.24 shows the same measurement over a wider bandwidth and a test signal of digital silence (all zeros).

Again, we can see the noise-shaping nature of the filter/converter in the unit. Note the compressed vertical scale—necessary to show the extent of the noise increase above the audio band.

The linearity plot (fig.24) is dominated by noise at low signal levels, but the converter appears fairly well-behaved until -100dB. The rather high noise level seen in figs.23, 24, and 25 is confirmed by fig.26, the MZ-E2's reproduction of a -90dB, 1kHz undithered sinewave. The waveshape is almost unrecognizable because of the excessive audio band noise overlaying the signal.

The MZ-E2's noise-modulation performance was only mediocre (fig.27). The unit had a rather high noise level, and there was some deviation between
traces, indicating that the noise floor shifts as a function of input level. There are also small peaks of energy centered on 7.5 and 15kHz.

Finally, the MZ-E2's intermodulation spectrum is shown in fig.24. We can see an alarmingly high level of 1kHz product (20kHz minus 19kHz), and also a 20dB increase in the noise floor in the top octave (note the linear frequency scale). This rise is due to the ATRAC coding of the test signals at 19 and 20kHz. I would have thought ATRAC could perfectly encode two simple sinewaves without a broadband rise in noise.

Overall, the MZ-E2's bench performance was only mediocre. The MDS-501's much better technical performance suggests that the MD format is capable of a higher standard than that seen in the MZ-E2 portable player.

CONCLUSION
I can make cases for and against Mini-Disc. First, the case against: MD is much more expensive than CD, offers lower sound quality, and isn't that much smaller to justify those two drawbacks. If you want portable music, buy a Radio Shack CD-3400 for $180. Moreover, with CD as your portable format, you won't need to duplicate your music library with MD.

The case for MD would include the argument that hardware and disc prices will decline dramatically in the next few years, making it closer in cost to analog cassette. Further, MD is much smaller, more convenient, easier to use, and less susceptible to damage than is CD in a portable application. The MD's shock resistance makes it usable in situations where CD would never work. And Sony claims that the ATRAC algorithm will be subject to significant improvements over time. Finally, the MD format allows the listener to make compilation discs of favorite music—a feature not possible with CD.

Now that I've objectively presented the pros and cons of MD, what do I think of it after living with MD for a few months?

On a functional level, I loved Mini-Disc. It's hard to imagine going back to analog cassette after experiencing the tremendous advantages conferred by an optical disc format. In fact, MD's sophisticated technology was a revelation. While the MDS-501's sound quality was acceptable, the MZ-E2's was noticeably poorer than that of a premium-grade analog cassette made on a good three-head machine. The MZ-E2 also fell short of the musicality provided by a good portable CD player.

Is it worth spending $1000 for the MDS-501 MD recorder, $550 for an MZ-E2, and $12 each for blank discs when you can enjoy higher sound quality from your existing CD library and a Radio Shack CD-3400? For those with a big bank account and the need to be the first to own new technology, the answer is yes—MD is lots of fun. The rest of us, however, should wait a little longer for prices to come down and for the sound to improve before jumping in.

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I first heard both the Paradigm Atom and the Energy Excel at the 1993 WCES. Both Paradigm and Energy heralded their respective speakers as the ultimate high-value/low-price statements, which both certainly are. After listening to a pair of Atoms or Excels, most non-audiophile music-lovers would find it difficult to understand why anyone would pay more than $160 for a pair of small speakers to be driven by an AV receiver. But are these speakers good enough for audiophiles on limited budgets? Yes and no. One sings, the other doesn't.

The Atom and Excel loudspeakers look almost exactly alike (the Excel stands ½" taller). They have identical 1½" rear ports and identical, permanently attached grilles. In a dark room, no one but the tactically gifted could tell them apart; in a lit room, even their designers might have a hard time distinguishing between them if their little plastic nameplates were removed.1 But they sure don't sound the same.

SYSTEM
I used the following equipment for this review: Analog sources: Thorens/Chadwick TD-125 Mk.II turntable mounted with a Graham 1.5 tonearm with arm-tubes fitted with a van den Hul MC-1 super cartridge, Dynavector XX-11 low-output MC cartridge, and an AudioQuest BH-200 cartridge. Digital sources: Musical Design CD One, Quad 67, and Teac VRDS-10 CD players. Preamplifiers: Dennenese JC-80 Mk.II gold, Atma-Sphere MP-1, Quicksilver, and Vendetta SCP-2A phono preamp. Power amplifiers: Parasound HCA-2200 II, Boulder 250 AE, Atma-Sphere MA-1, and a Fisher Model 150 receiver. Comparison loudspeakers: Vision Acoustics Soloists, NHT SuperZeros, and Quad ESLs. Interconnects: Straight Wire Virtuoso, AudioQuest Diamond, Virtual Audio ART; Esoteric Artus (balanced and single-ended), and Wire World Eclipse (balanced and single-ended). Speaker cables: Straight Wire Maestro bi-wire, Virtual Audio ART, and Wire World Eclipse. Other accessories: RoomTunes CornerTunes, Echolines, Ceiling Clouds; and JustaRack; Acoustic Sciences Tube Traps; Arcetri Superstructure IIAs; AudioStream equipment rack; Bright Star Big Foot and Little Rock for CD player; Sorbothane pucks and Target speaker stands for amps; Fluxbuster; Shun Mook wooden pucks; Original Cable Jackets; Music and Sound ferrite beads; AudioQuest ferrite clamps; Chang Audio Lightspeed model CLS 6400 ISO power-line filter; AudioQuest record brush; Nitty Gritty record-cleaning machine; Radio Shack sound-pressure-level meter; Virtual Audio ART record clamp; Kleenmaster Brilliance CD cleaner; and the collected works of Lewis Carroll.

LISTENING
I auditioned both speakers primarily in my small listening room;2 it would be folly to try to drive small speakers to satisfying levels in my large listening room, and besides, most people use small speakers in small rooms. I broke the speakers in (about 200 hours/speaker) and did preliminary listening (I was in the same room with the speakers during break-in) in my bedroom system, which consists of a vintage Fisher 150 compact receiver (ca 1969) and a Sony D-3 CD player. I used this decidedly non-state-of-the-art stuff because I figured it's more similar to the kind of gear that most Excel and Atom owners will hook their speakers up to; if, if these speakers only sound good with hyper-expensive gear, they'll be of little use to audiophiles on tight budgets.

I used the Paradigm S-70 speaker stand ($79/pair) with both speakers. Comparing the S-70s to the Energy SST-26 speaker stands ($69.95/pair) made it clear that the sand-and-shot-weighted S-70s are sonically superior to the far lighter SST-26s: Both speakers had more bass extension and better imaging with the S-70s, and they benefited from a more stable platform. It's much harder to knock over the S-70s or knock the speakers off the stands; if you're clumsy, as I am, the extra $10 for the stand and $3 for a bag of sand is money well spent.

The speaker-wire hookups of both speakers are of the dreaded spring-clamp type, which require a certain amount of spade-lug mangleing. (The only termination worse than spring clips is the kind where you place your tongue between the spade lugs and the speaker terminals.)

All speakers were placed 32" from the rear wall (measured from the back of the speakers), 53" from the speaker's right side to the side wall, and 55" from the speaker's left side to the other side wall. The distance from my ears (33" above the floor when I'm seated) to the speakers' front baffles was 76". The tweeters of the Atoms and Excels were 37" and 37.5" off the ground, respectively. All measurements were made with a Stanley heavy-duty tape measure, of course, to ensure minimal tape droop.

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just don’t fall off your stool. The Excel tries hard to sound as if it costs more than $160, and it succeeds mightily in that in a few areas. Unfortunately, these successes come at a rather high price.

**The Good News:** The Excel did a few things rather well. First, the pinpoint precision of its lateral imaging rivaled that of any small speaker I’ve ever heard. On Buddy Guy’s Damn Right, I’ve Got the Blues CD (Silverstone 1462-2-J), the individual musical and vocal parts were anchored quite precisely to individual spots in the lateral soundstage, regardless of playback level.

The Excel’s sense of top-end air was good. The flute on Flute and Piano Music of Latin America (Musical Heritage Society MHS 512502H) had just the right amount of shimmer. On Clifford Jordan’s Precious Energy: Live at Ethell’s (Mapleshade 512694A), the high-hat was rendered quite convincingly. The Energy also had reasonably flat bass extension to about 80Hz. They rolled off smoothly without any noticeable hump in their upper bass (which would add extra weight), so should mate rather well with subwoofers. The Excels handled power well, showing little sign of strain up to about 97dB measured at the listening position, at which point they became hard and dynamically compressed.

**The Bad News:** The Excel’s tweeter emphasized sibilance a bit, giving everything a slightly dry, gritty edge. While the Excels weren’t noticeably harmonically thin, neither were they musical or sweet in their rendition of music. With Neil Young’s Ragged Glory (Reprise 92615-2)—a slightly nasty recording—they quickly became fatiguing, even when fed with kilobuck electronics.

The Excels had very little depth. Even track 10 (“Mapping the Soundstage”) of Stereophile’s Test CD 2 had little in the way of real depth or dimension. The Excel’s midrange wasn’t terribly pleasant, due largely to the tweeter’s slightly sandy quality. My wife described the Excels as “flat,” meaning that, to her, they lacked life, giving the music a “ canned” quality. As usual, my wife was right on the money.

The midbass had very little dynamic kick. The acoustic bass on Holly Cole’s Don’t Smoke in Bed (Capital CDP 81192) lacked the weight and dynamic impact needed to be musically satisfying. Through the Excels, the MC5’s Kick Out the Jams (Elektra EKS 74042) couldn’t kick out a leg on a Bradlees plastic plant table.

**Measurements from JA:** The Excel’s B-weighted sensitivity was quite high for a small speaker, at a calculated 85dB/W/m. Its impedance (fig.1) only dropped below 6 ohms in the lower midrange, indicating that the speaker should be relatively easy to drive. The port is tuned to a highish 65Hz, revealed by the saddle between the two bass-impedance peaks.

The Excel’s quasi-anechoic response on the tweeter axis, averaged across a 30° angle at a distance of 45°, is shown to the right of fig.2. In addition to the usual ultrasonic resonance at 26kHz, the tweeter has a sharp peak in the top octave, as well as a slightly rising response in this region. This could be part of the reason for the Excel’s unforgiving high frequencies. The lower midrange is a little depressed compared with both the low treble and the upper-bass peak. This might well exacerbate the speaker’s top-octave energy excess by adding a slightly lean character to the mids.

The left of fig.2 shows the individual nearfield responses of the woofer and port, as well as their complex sum (phase and magnitude) weighted in the ratio of their radiating diameters. The overall response peaks by 4dB before rolling off to reach a surprisingly low –6dB point of 42Hz. This is the classic LS3/5a trick: boost the upper bass a little (but not too much), and the ear is fooled into thinking there’s more bass present than there really is. To judge by his listening impressions, SS’s ears weren’t fooled.

Small speakers can have excellent dispersion, due to their baffles and woofers being smaller than the wavelengths of the sound they’re producing until well into the mid–treble. The Excel is no exception: its horizontal dispersion (fig.3) is maintained well into the top octave up to 15° off-axis, while beyond that angle,
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the highs fall off in a well-controlled, even manner. Vertically (fig.4), it's best to sit with your ears level with the Energy's tweeter, mid-treble suckouts developing above and below that axis. I note that SS sat with his ears about 4" below the Energy's tweeter axis. Fig.4 shows that this would introduce a slight presence-region depression.

In the time domain, the tail of the Excel's impulse response (fig.5) is overlaid with ultrasonic ringing from the tweeter. The associated step response (fig.6) reveals the tweeter and woofer to be connected in the same polarity, but with the latter following the former by about 0.3ms. However, the speaker's cumulative spectral-decay, or waterfall, plot is very clean, with only a minor mode visible just above 5kHz in fig.7. In the high treble, however, the top-octave peak can be seen to be associated with a severe resonant ridge parallel with the time axis. Again, I assume this is partly to blame for SS's dissatisfaction with the speaker's high frequencies.

All things being equal, small speakers can be more rigid than larger ones, pushing up cabinet resonance frequencies to regions where they'll be less subjectively disturbing. The Energy Excel's cabinet, however, was quite lively: fig.8 shows a typical waterfall plot calculated from the output of a simple, flat PVDF-tape accelerometer attached to the center of the enclosure side panel. The side wall appears to be flexing at the bass-tuning frequency, with a strong mode noticeable at 373Hz. This might add some lower-midrange congestion as well as (maybe) a slowing of musical pace. I note that SS did mention a lack of "dynamic kick" to the speaker's presentation.

—John Atkinson

**PARADIGM ATOM**

I like this speaker because it gets the midrange frequencies right—to me, the most important function of a loudspeaker. If a speaker can't reproduce a human voice, an acoustic guitar, and a piano with some degree of accuracy, it's bad—regardless of how well it images, if it has top-end air, bass extension, or any other audiophile nicety.

The Atoms not only get the midrange right, they also have reasonable bass impact and can put out fairly high spls (98dB A-weighted peaks) without distress. The end result is a reasonable approximation of music for well under $200.

**The Good News:** The system in my small listening room is also my video system. I had the Atoms set up during the Olympic broadcasts and, since CBS seemed to broadcast two minutes of ads for every minute of Olympic action, I heard many commercials through the speakers. Coke's "Makin' Whooppee" became a favorite of mine, and it sounded really good through the Atoms. On my PCM recordings of the Boulder Philharmonic, depth and dimensionality were rendered quite well, with very little spatial compression, and instruments retained their "bloom."

While not as precise in their lateral imaging as the Excels, the Atoms did
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STEREOPHILE, SEPTEMBER 1994
rendered by an Acoustic Energy AE2, a Vision Acoustics Soloist, or an original Quad ESL. The Atoms had reasonable dynamic contrast, but again, they were completely blown away by such large systems as the Apogee Full-Range or Fosgate and Snell surround systems (especially on movies). Even a Vandersteen 1B could kick the Atoms' butts in contrast and dynamics.

A hump in the Atom's lower midrange and upper bass made it sound more weighty, giving it more impact than the flatter Excel. With the speakers used on their own, this hump serves the music, but it may give the speakers an unsightly upper-bass bulge if you mate them with subwoofers.

Measurements from JA: The Atom was 1dB more sensitive than the Excel, with a calculated B-weighted sensitivity of 86dB/W/m. Like the Energy speaker, its impedance (fig.9) stayed above 6 ohms in the upper midrange and treble, implying an easy amplifier load. The port is also tuned to 65Hz.

At first glance, the Atom's frequency response (fig.10) also appears very similar to that of the Energy Excel. While each appears to have a slight midrange dip, the Paradigm's bass rise is both less pronounced and covers a larger frequency range. From the auditioning notes, I would have expected the opposite, SS finding the Paradigm to have a weightier upper bass. I suspect that Steve is responding more to the range covered than to the amount of upper-bass boost. Again, the overall low-frequency response is calculated by adding the nearfield responses of the woofer and port (magnitude and phase) in the ratio of their diameters. The Paradigm's -6dB point is higher than the other speaker's, at 47Hz. The treble is also less evenly balanced, but it doesn't have the top-octave peak that appeared to downrate the Energy speaker for SS.

There's a slight crossover-region suck-out on the tweeter axis, centered on 3kHz. Fig.11 shows that this fills-in both a little above and below this axis; in fact, as SS sat with his ears 4" or so below this axis, this probably gave him the most even treble response. Horizontally (fig.12), the Atom has excellent dispersion, due to the small dimensions of its baffle and woofer.

The Atom's impulse and step responses (figs.13 and 14) reveal that both drive-units are connected in the same polarity, but the speaker is not time-coherent. The associated waterfall plot (fig.15) reveals a very clean decay pattern, with just a bit of low-level hash visible. There's also some delayed energy associated with the 3kHz suckout, as well as with the on-axis notch at 14kHz.

The Atom's enclosure is quite lively, fig.16 revealing a strong resonant mode at 140Hz present on the top panel, as well as some modes higher up in fre-
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quency. The side panels were quite a bit stiffer, forcing the main mode up much higher in frequency, to around 550Hz, where it will not have a major subjective effect.

Despite SS's more positive conclusions about the Paradigm Atom, it really doesn't measure much better than the Energy Excel. Which, I suppose, goes to show that listening is the best way to assess a loudspeaker's overall quality.

—John Atkinson

**NHT SUPERZERO**

Given Corey Greenberg's glowing review of the SuperZero in the January '94 Stereophile (Vol.17 No.1, p.139), I expected the speaker to stomp all over both the Atom and the Excel. The NHT had the Excel's top-end air and extension without any of its grittiness, and far more air and top-end extension than the Atom. The SuperZero's midrange, smoother than the Atom's, highlighted the Excel's sandy treble as if in neon. The SuperZero's resolution was also noticeably higher than that of either the Atom or the Excel. The SuperZero's soundstaging could compete with any small speaker I've ever heard.

While the NHT was noticeably better than the Atom, I did not feel it to be more musically satisfying. The SuperZero may be a much better audiophile speaker, but it's far more valuable as a building block to a complete NHT system (with one or two SW2 subwoofers) than as a stand-alone speaker. Most non-audiophiles will probably find the SuperZero too bassless for musical satisfaction. Its 4.5" woofer just doesn't have the lower-midrange/upper-bass [oomph](http://example.com) of the Atom's 5.5" woofer and larger box. Sorry, Corey, Beavis and Butt-head would prefer the Atoms—the SuperZeros just don't kick butt. Most audiophiles would probably prefer the SuperZero only if it was mated with a subwoofer.

**SUMMARY**

The high-end dealers I talk to often bemoan the dearth of entry-level-priced products for Generation X and younger music-lovers. When I discuss this problem with high-end manufacturers, most point to their under-$1000 (often over-$900) components as solutions to the affordable-equipment conundrum.

Get real. The people who inhabit today's postage-stamp sized apartments need a system that costs around $1000 and produces some semblance of music.

In the past, when non-audiophile friends and relatives have asked me to recommend speakers they could afford, my suggestions started at $500/pair. Their eyes would glaze, their shoulders

---

5 John Atkinson's March '94 "As We See It" was quite reasonable and made perfect sense, but I still feel it was basically an apology for the high cost of the High End. $2300 for an entry-level system? While this is the adjusted 1994 price for a system that cost $549 in 1969, it's still a great deal of money to someone who's just starting out. Most Generation Xers don't spend that kind of money on their first car, let alone their first stereo system. JA is right when he says that the public's perception of how much high-quality sound should cost is based on 1969 prices; but if entry-level high-end products are to survive into the mid-'90s, they have to be not only sonically superior to $800 plastic-rack systems, but price-competitive as well.
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Follow-Up

Radio Shack Optimus CD-3400 Portable CD Player

My interest in the Radio Shack Optimus CD-3400 was stirred by hearing Sam Tellig praise it at the Stereophile High-End Hi-Fi Show in Miami. Then a friend and veteran hi-fi enthusiast told me that every self-respecting audiophile had to have one. I bought one the next day, on sale for $129.95. At that price, I figured that even if it wasn't everything it was cracked up to be, it would still fill a niche for me; I've never had a portable player before. At the very least, it would be a source of music at my workbench.

I thought it sounded merely okay through its headphone jacks, driving either the Grado SR80s or the much more comfortable JVC HA-D990.1 The fact that it inverted absolute polarity didn't bother me, but a low-level clicking sound imposed on the music as the batteries ran low did. Running its line outputs through my HeadRoom Supreme headphone amplifier made a world of difference. What I hear from the pair is more than musically satisfying; it's downright pleasurable. The CD-3400 sits directly atop the HeadRoom on a table next to the bed; I can lie there in the dark and listen 'til dawn if I wish. Unlike JA, I haven't had any trouble with stacking them. [See Tyll Hertsen's explanation in this month's "Letters."—Ed.]

I auditioned it side by side with my Randy Tomlinson-modified JVC XLZ1010 TN: No comparison, but it performed amazingly well for something so cheap. I think it will benefit from a massive outboard 6V supply, which I need to find time to build. Until then, the Radio Shack AC adapter will suffice.

Next test was at a friend's home in a duel with another portable: the Sony D-3. We played both through his Naim electronics and KEF loudspeakers. Sorry, folks, the Sony was superior in every respect: sweeter top end, more involving midrange, and deeper, richer bass. The Sony, of course, is about three or four times the price of the CD-3400, and lacks a digital output.

And that's where the CD-3400 is really outstanding: as a transport. I sat the little player, powered by four alkaline batteries, on top of the "master" of a pair of Meridian D-6000s, and fed its digital output into the Meridian's input through a Radio Shack adapter and a short XLO cable. I was amazed at what I heard. I kept thinking, "A hundred and thirty bucks. We're getting this kind of sound for a hundred and thirty bucks!" Not really, of course; we got that kind of sound for $130 plus $15,000 for the Meridians. But it convinced me that, transport-wise, 95% of the battle can be won by a cheap device that plucks the bits off the disc and sends them in a steady stream to a high-quality processor.

About two days after I got the CD-3400, I accidentally subjected it to a drop test from shoulder height onto a marble floor. It was visibly unharmed, could spin the disc, but couldn't read it. I repacked it and returned it to Radio Shack, where the clerk promptly gave me another one. He asked me if I wanted to buy an unconditional five-year warranty for $60—almost half of what the thing cost! It seemed like a lot at the time, and I said no. But maybe I should reconsider, because a dollar a month isn't much to insure something I know will get dropped again.

—Barry Willis

Convergent Audio Technology SL-1 & Jadis JP-80MC Preamplifiers

When I first landed safely on Planet Stereophile, JA asked me a loaded question: How would I feel about comparing the two preamplifiers in my system at the time—the Convergent Audio Technology SL-1 Signature (my longtime reference) and the Jadis JP-80MC? How does one decline such a request?

As often happens in High-End La-La Land, this delectable contest was put on hold until Jadis changed the capacitors they were using in their unit, and DO had concluded his review. The current production, Philips-capped version—finally coaxed from fellow tube-lover Monsieur Ol-share's grasp and measured by TJN—was dispatched to my waiting system.

When I contacted Ye Olde Editor to announce the Jadis' arrival, he updated the article's raison d'être: "Jonathan," he said, "should a CAT owner dream about one day owning a Jadis JP-80MC?" Hmmmm. Food for thought.

The similarities and telling differences between these two preamps speak eloquently of the wildly disparate cultures that concocted them. This was going to be fun—if a little dangerous. Of course, both countries have circumstances to live down. Let's not forget l'Affaire Edsel. Recall, too, that Jerry Lewis is much admired in France. There, I think the books are balanced. Shall we move on?

The Cat in the Hat

The CAT looks Lab-Grade Chic (especially in all-black livery) in its hernia-inducing, mass-damped chassis, augmented by internal surfaces covered with (ironically) a vivid, French-blue damping material. The exposed screwheads make it look businesslike and cobby—especially when raised on footers of one type or another.

The separate power supply is housed in a small but heavy chassis containing the transformer and some supporting circuitry. The regulation for the tube heaters and the first stage of regulation for the audio signal live here; designer Ken Stevens feels that all subsequent audio-signal regulation must be physically close, for more precision.

A very few CAT owners may experience the ill's of RFI entering the unit, either through the umbilical between the control unit and the power supply, or in another fashion. During one of his infrequent visits to NYC, Ken remedied a good 80% of the RFI that had plagued our unit; should you also have this problem, he can help. I'm aware of only one other case of an unsalvagably hissing CAT: from a fellow scribe who lives between the Empire State Building and the World Trade Center, in the middle of Microwave City. Ken informs me that only a few incidences of Demon RFI have been reported by the many people around the world using CATs. I'm listening to a Clearaudio Signature phono cartridge (0.6mV) as we speak, and the CAT has plenty of clean and quiet gain to burn.

I've owned three CATs over the years (one Reference, two Signatures), and they've given me literally zero problems. For those counting, tube-saving soft-start warmup time is 90 seconds from Standby to Operate; a newer unit takes a full two minutes before you can step on it. The CAT sounds good after about 20 minutes, but it needs the same one-hour warmup as the JP-80MC before the fat lady really sings.

Cat Tube Matters

The CAT's tube-filled interior is a sight for sore ears. Under that heavy top plate

1 Recommended by Bill Sommerwerck in his comprehensive review a few years back, and available via mail-order from Stereo Advantage in upstate New York for $65.90. Call (800) 446-0072.
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are a pair of Sovtek 6DJ8s serving as left and right phono inputs, followed by a pair of 12AX7s for gain, followed by a single Sovtek 6DJ8 output (cathode follower). Same arrangement on the line-stage, except it has a pair of 12AU7s serving input duties. This is the most ticklish tube pair in the CAT; it takes time and luck to find a closely matched pair of 12AU7s that don't spit and splutter. If they're noisy in the George Kaye Labs Tube Tester, they'll make a racket in the CAT's line inputs. All other tube positions are filled easily enough (even the phono inputs), although in order for the CAT to perform, you've still got to have tubes that measure well and sound good.

If you're measuring, T1 (triode one of a dual-triode preamp tube) is more critical than T2, so bear that in mind when you slip surreptitiously out of bed in the middle of the night for a measuring session. (You wouldn't want to do this in front of anyone else, would you?) Of course, changing the phono inputs can drastically change the sound, but we're happiest with the Sovteks. Forget vintage tubes for the CAT—stick to Ken Stevens's approved factory tubes (a mix of Sovtek, German, and Yugo Nationals). This advice comes from a guy with a drawer full of tubes—under hard audio-reviewer use, I get about a year from a fresh set.

**CAT TWEAKS**

The ultimate CAT tweak is to get a new one. Ken has a habit of upgrading the unit slowly, without changing the model designation. This way his fans won't suffer from rampant Upgrade Nervosa at the drop of a model suffix. But how bad can a CAT be? Still, most current units are significantly "better" than those of a year ago. But don't faint dead away yet—CAT offers a factory upgrade. Just give Ken a call and crunch some numbers with him. Any unit with a serial number greater than 5400 can get the full treatment. Believe me, it's worth it.

As set up in our system, the CAT is slightly compressed. (It's in a Michael Green Designs ClampRack. [hadaBOOM! I can't help myself.] The ClampRack is more effective with the JP-80MC; the CAT changes but little when clamped due to its damped, heavyweight, "pre-tuned" chassis. When clamped, it sits on three of the smaller Audiopoints (two front, one rear), with one centrally located up top. I also enjoy especially musical results with the CAT when it's being supported by Shun Mook Super or Ultra Diamond Resonators. The larger Audiopoints, which also do the Drain the Vibe Transfer Thing (to a lesser extent than full clamping), are good choices as well. Ken likes his factory-supplied squidy O-ring feet the best, but he's open-minded. Sort of. He's designed a preamplifier "system," not just a box.

Harmonixing CATs is de rigueur with all the CATnappers I know. Pop the hood and press a single Harmonix RF-57 onto the back of the volume control, and onto five or six points on the perimeter of the circuit board— with one roughly in the center. There's no trick regarding placement; the precious little available real estate on the main circuit board will determine where you can put them. Just be careful not to set the metal tuning device directly upon a circuit trace or solder joint, or you might get roast CAT.

**ZOTTITTIT! FWOOOOOOOOSH!**

"Hello, ah, Ken . . . ?"

Rounding out the tweaks were three Kable Jackets (as they're now known) on the Marigo Gen.2 power cord, one Jacket on the umbilical, and others scattered throughout the rest of the system. Jerry Gladstein, ex-honomo of now-defunct G&A Rare Records and an enthusiastic CATman, gave me a number of sensible "safe sex for CATs" rubberized red nipples to slip over the selector switches for static-prone winter months, but they make the SL-1 look somewhat tawdry. This might be a good tip if you live with one of these felines in steam-heated Minnesota.

**THE JP-80MC, LA BELLE EPOQUE**

But what can one say, mon ami? The Jads is beautiful, sensuous, and terribly elegant in its Cartier-like livery. Le plus sexy, no? It's a two-chassis design as well; its heavy power supply and supporting circuitry are contained in a full-size chassis that cosmetically matches the control unit. The supply is connected to the preamp via an umbilical with a high-tech screw-type fitting rather than "captured," as with the American product. Importer Victor Goldstein can be quite insistent regarding this important connection, admonishing anyone who touches his babies that they must wait a good five minutes after shutdown before disconnecting the umbilical (or until the red LED extinguishes completely). If not, it is the French Toast, n'est ce pas?

It takes an excruciatingly long six minutes for the JP-80MC to warm up. Although this gives the tubes time to warm up properly, I could have plotted from the anticipation! I've been fortunate enough to have several JP-80MCs in my system over time, but I've never owned one, so I can't comment on its overall reliability; the ones I've listened to have never hiccuped or put a tube wrong. Confidence grows tremendously when you open the bottom plate and see the unbelievable Old-Audio-World-Quality point-to-point wiring. I've never heard of any complaints regarding the stepped volume control. (Who'd have the nerve to complain after dropping fourteen grand? And if you don't own one, it'd just be sour grapes!) This updated JP-80MC seems perfectly immune to RFI, but an earlier version proved unacceptable in the hostile New York environment.

**LES LAMPS!**

After my initial listening, I replaced the stock Eis (and a pair of as-supplied Yugo National 6DJ8s) with a set of vintage Telefunkens supplied by Andy Bouwman at Vintage Tube Services. These proved to be gorgeous—warm, sweet, liquid, lush, and charming; a little rolled in the highs, a bit soft in the bass, and lacking a certain sense of transparency, authority, and macrodynamics (although microdynamics and tonal shadings were wonderfully served). The Telles made me smile. I loved them, but I felt as musical as they were—the sound too closely resembled that of the ancient JP-80MC. I'd heard from Goldstein (time for a grain of audiophile salt) that the new preamp was faster, and more transparent and neutral, so out came the Telles. But Monsieur sends his regrets.

Next I pressed into service a set of Gold Acros. Frank Morris of Gold Acro sent along three sets of phono input tubes to choose from: 6DJ8s (Eis from Serbia), 6922s (Telcas from Czechoslovakia), and my favorite of the bunch—7308s (Siemens from West Germany). These were accompanied by a platinum pair of 12AX7s for the critical MM input and high gain-stage (part of the MC circuit path), and a quad of matched Gold spec 12AX7s for the rest. These tubes moved the sound of the JP-80MC more toward that of the CAT. While still expressive, full, rich, dynamic, and sweet, the sound became more transparent, faster, and more detailed—certainly sounding more dynamic and powerful.

While it was extremely pleasing, I ultimately preferred the sound of this unit with the as-delivered Ei 12AX7s—they provided the most detailed, transparent, and quick sound of the lot, if not the richest or fullest possible presentation. It's a question of taste—a subtle way of

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1 That's what they call tubes in France. No kidding.
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altering the JP-80MC’s musical perspective. You can substitute the 7308s in the MC phono inputs, but not 6922s, Sovtek or otherwise! You’ve been warned, mes amis! 6922s are not permitted unless you want see French Toast once again, no?

Except for the tube cage, the JP80 leaves its tubes exposed in plain air; I fitted a set of Ensemble Tubesox to damp whatever tendencies toward microphonia they might possess internally or pick up via acoustic feedback. Believe me—when we’ve got Nina Hagen playing, there’s plenty of acoustic feedback!

LES TWEAKS

The Jadis arrived with an importer-installed quartet of Combak/Harmonix RF~56 tuning devices at the four corners of its chassis top. I listened to it for a while in the tight embrace of the Clamp-Racks with a trio of large Audiolights both on bottom and on top, for Noxious Vibe Transfer. Although contrary to Michael Green Thinking, I ultimately preferred the JP-80MC uncompressed, tube cage off, Tunexox on, and Shun Mook Ultra Diamond Resonators beneath. The JP-80MC is also well served when placed upon a quartet of Combak/Harmonix RFS-66 large tuning feet.

The JP-80MC got a Kable Jacket right in the umbilical (I bet that smart), and another three on the Transparent Audio PowerLink Super power cord that Victor Goldstein provided, and which made a synergistic match with the preamp. It seems that the newest tweak from Beyond the Valley of the Kable Jackets making the rounds of the RF Cognosci is the use of three Jackets on power cords to the preamp, turntable, CD transport, and amp.

THE BEST OF LE SEES-TEM

Digits centered around the Jadis JS 1 Symmetrical Converter (review in progress), in conjunction with the Forsell Air Bearing CD transport and pants presser. The demure, unique, and cute Parasound TL0 CD transport arrived at one point—a no-holds-barred kilobuck top-of-the-line assault on CD transport perfection from the makers of the well-regarded TL1. It’s got sex appeal.

Did I say “centered around” and “digits” in the same phrase? Forgive me. Vinyl centerstaged on the Forsell Air Force One, also on a four-shelves-for-added-stiffness ClampRack. The Forsell doesn’t budge on top of this assemblage, and thus maintains a tightly disciplined matrix between Flywheel and ‘table. Steady speed all day, every day.

Speakers are my trusty and heavily optimized Avalon Ascents. Cables used were Siltech LS4-240, and interconnect their 4–80 between the JS 1 (or the Timbre Technology DAC) and the Preamp Of The Moment. A long run of Siltech FT4M Si to the Jadis JA 200s finished things up.

L’HEURE DE VERITE

In a conversation I had the other day, a colleague kept abusing the phrase “bottom line.” He’s a bottom-line kinda guy. But it would be legit here to beg the question, so here goes.

Both the Jadis and the CAT are stunning, top–rank designs. Let’s not lose sight of the fact that the CAT retails at $4950, while the JP-80MC is a mere $13,990. Despite this large price differential, both seek and achieve their wonderful senses of musicality through different means. Because of its awesome ability to focus and finely “draw” a soundstage, the CAT is unmatched in its re-creation of the musical event. The image outlines are incredibly sharp, but not flat, as if caught in a camera flash. The CAT fosters an illusion of true depth from which extremely palpable images, which take up space and are surrounded by cushions of air, are presented in a realistic and proportional manner left to right, and stunningly layered front to back. It takes my breath away. This sense that I can walk right between “the singers and the dancers” is just heaven for me.

The CAT’s soundstage is set back somewhat and does not [echo on] Brillows [echo off] like the JP-80MC. It can also sound a touch narrower than the JP-80MC on some material. But the air, the uncanny silence between the performers, the finely rendered, three-dimensional—almost sculptural—manner in which the CAT images, coupled with its fantastic neutrality, are its true claims to fame. It seems more dimensional, ergo more “intellectual”—and therefore, for me, very involving. I need that.

The CAT tracks the audio signal like an athlete, yet this speed is achieved without etch, grain, or brightness. This contributes to the CAT’s remarkably transparent, precise imaging, and to its great sense of pace. The detail retrieval is phenomenal; it resolves. Ken loves to point to the ease with which you can hear Fritz Reiner’s breathing in the opening minutes of Rimsky-Korsakov’s Scheherazade (Chesky RC4). It is, in fact, easier to hear this on the CAT than on the JP-80MC. But this in itself means nothing. The overall gestalt of the two preamps is what makes them live and breathe. And they both breathe magnificently!

The JP-80MC’s focus on musicality takes an alternative tack. Here it’s the reproduction of the fullness—the subtle harmonic richness and texture of live instruments in acoustic space—that renders the JP-80MC’s version of the musical event so compelling. It’s overwhelmingly sensuous and emotional; it’s about feelings.

As fabulous as it is, and as much as its imaging transcends that of more pedestrian designs, it’s certainly less focused and transparent than the CAT. Everything is relative, Grasshopper; we’re talking about a couple of the best here, but the JP-80MC’s verisimilitude to the sound of real music is captivating. It throws a simply enormous soundstage—one that easily takes over the acoustic of my listening room. Somehow I don’t care that it doesn’t image as tightly as the CAT. What it is is . . . ineffable.

The Jadis’s bass is not as tight, as tuneful, or as deep as the CAT’s, and therefore carries the pace less effectively. The CAT sounds more controlled and taut than the Jadis, but it’s not lean in any sense; there’s just less harmonic bloom in comparison to the Jadis. For instance, I can’t help but fix on the Jadis’s gorgeous midrange and upper registers, but I’m not drawn in the same way to any particular sonic range of the CAT (although that imaging really grabs me).

What does it all mean? It comes back again to the importance each unit places on different areas of the sonic landscape. I’m attracted to this new JP-80MC because of its lush, emotional, full presentation of harmonic shadings, its micro-dynamics, and its newfound ability to remain neutral. And its phono stage is truly a work of art.

I love the CAT for its knockout sculptural imaging and transparency, its total neutrality, its ruthlessly revealing nature, and its sense of pace, drama, and macro-dynamics. What can I say? I want to own both. Lock me up.

I’ll miss the JP-80MC when it’s wrenched from my grasp, but every time I switch back to the CAT, I’m once again startled by and involved with its potency of presentation.

As your musical tastes evolve, different elements of sound reproduction may become more or less important to you. That’s been true for me in My Life As An Audiophile, Part Deux. I’ve learned much about myself as my listening tastes have changed. Right now, animal-lovers rejoice: in my system, it’s Le CAT that does it for me.

Do I dream of one day owning the JP-80MC? Yes—for what it offers, and for what it means I will have become. I feel myself morphing as we speak . . .

—Jonathan Scull
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Early in the 19th century, some 200 medieval poems and songs were discovered in the library of the ancient Abbey of Benediktbeuern in Upper Bavaria. These included poems by monks and wandering scholars, mostly in Medieval Latin, and verses in the vernacular Middle High German. Dating from about 1300, the manuscripts are moral and satirical songs of the period about shortcomings of the state, the church, and the educational system, and protest the power of money, declining conscience, and lax morals. Many songs praise love and nature, and the joys of drink and play. Scholar John Andres Schellerd edited the collection in 1847, and the result was published under the title Carmina Burana ("Songs from Bavaria").

Carl Orff (1895–1982), fascinated by these texts, immediately began to set a number of them to music. Many had already been set to original music of their own, but to most modern ears these settings pale in comparison with Orff’s vivid treatments. Though the songs and poems were written in Latin and medieval French and German, perhaps it’s just as well that literal English translations of the often salacious texts are not performed for today’s somewhat staid audiences.

Orff’s score is highly repetitive, the music mirroring the songs’ multiple verses, and the orchestral forces required are huge: full strings, brass, two harps, three pianos, three guitars, and a massive percussion section.

Orff was 42 in 1937 when he composed Carmina Burana.1 Largely self-taught as a composer, at the age of 16 he published his first collection of songs, and at 17 composed a three-part cantata, Also sprach Zarathustra—and, a year later, his first opera, Gisei, das Opfer. The importance of Orff’s score is reflected in

1 Carmina Burana is the first part of a trilogy, the other two sections being Catulli Carmina (1943) and The Triumph of Aphrodite (1950/51), both based on verses by the Roman poet Caius Valerius Catullus.
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his decision that it be considered the beginning of his collected works; he entirely dismissed earlier experiments in Romanticism, Impressionism, and the Baroque.

_Carmine Burana_ begins and ends with "O Fortuna," a forbidding apostrophe to the Goddess of Luck. This dramatic opening relates the changing destiny of humankind via the use of an important symbol—the Wheel of Fortune (depicted on the front page of the score) perpetually turning, bringing good luck and ill—the story of human life constantly buffeted by Fate. "O Fortuna" is followed by another chorus, "Fortuna plango vulnera," reciting the woes of changing fortune. Then follow the cantatas three central sections: Spring, In the Tavern, and The Court of Love.

_Spring_, a celebration of human encounters with nature and the rebirth of the earth after winter, begins with the gentle, pastoral "Veris leta facies," sung by a small chorus. "Omnia Sol temperat," for baritone and orchestra, is a bucolic paean to spring, while the third song, "Ecce gramum," is for chorus alone. The quietly playful mood moves up a notch in excitement with the first orchestral interlude, an invigorating dance for orchestra highlighted by a delightful interplay between solo flute and timpani, with brilliant rhythmic punctuations alternating three and four beats to the bar. After "Floriest silva," for chorus, comes "Chramer, gip die warve mir" ("Give me the rouge to make my cheeks red, so that I can invite the young men to welcome love... Look at me, young men! Let me please you"). This is followed by a three-part medley: "Reie," a slow dance for orchestra; the chorus "Swaz hic et gat umbe," which begins vividly with pizzicato strings playing a highly rhythmic figure; and the lullaby-like "Chume, chume geselle min" (also for chorus). Spring closes with "Wrec diu werl alle min" ("If all the world were mine... I would give it up to have the Queen of England lying in my arms").

_In the Tavern_, basically a series of drinking songs, begins with "Estuans interius," in which the baritone bemoans his fate: "Greedier for pleasure than for welfare, dead in soul... I look after my body..." There follows a bizarre song sung by a tenor in a register uncomfortably high: "Olim latus coluram," the story of a roasting swan. ("Once I was beautiful, now I am black and roasted... the cock turns me about on the spit... the fire roasts me through... I see gnashing teeth that would masticate me... Woe, woe is me!"). Baritone and chorus sing "Ego sum abbas," in which the Abbot of Cucany tells of his debauched life ("Whoever meets me in the tavern over dice in the morning will go out naked by the end of evening"). And "In taberna quando sumus," for male chorus, lists no less than 32 different kinds of drinkers.

_PERHAPS IT'S JUST AS WELL THAT ENGLISH TRANSLATIONS OF THE OFTEN SALACIOUS TEXTS ARE NOT PERFORMED FOR TODAY'S SOMETIMES STAUD AUDIENCES._

_The Court of Love_ celebrates love pure and love physical, virginity undone, and passion and submission to love. This third central section opens with "Amor volat undique," sung by soprano and ragazzet ("A girl without a man lacks all delight"). After "Dies, nox et omnia," a baritone solo, comes "Sicut puella," for soprano and orchestra, perhaps the most beautiful tune in the entire work. It describes a girl in a red tunic ("There stood a girl, like a little rose... her face was radiant and her mouth bloomed"). This is followed by "Circa mea pectora," for baritone and chorus, and a song for male chorus: "Si peuer cum puelula," describing the union of a happy couple. "Venii, veni, venias," for double chorus, extols the joys of physical love. "In truitina," for soprano and orchestra, tells of a young maiden's dilemma between wanton love and chastity. Even more explicit is the next song, "Tempus est iocundum," for soprano, baritone, and children's chorus ("My virginity teases me, my innocence defeats me... I bloom all over"). Then comes the shortest song of all: "Dulcissime," a magical moment as the soprano, accompanied by soft strings, sings "Sweetest boy, I give myself to you utterly." The penultimate song, "Blanziphor and Helene," for chorus and orchestra, nails beauty and Venus, after which the key returns to minor for the segue'd return to "O Fortuna," and Orff's entire "secular cantata" ends with blazing brass fanfares.

Orff was merciless in his demands on the three solo singers. He obviously had a particular sound in mind for the male soloists: the writing for both is so high that they occasionally sound like straining countertenors. The tenor has the easiest task: he sings only one song, six bars of music repeated twice. But the song, about the miseries of the roasting swan, is ungrateful to the voice, at three points reaching a high D. The baritone's part is more demanding. He sings in six of the songs, and at one point, toward the end of "Dies, nox et omnia," must sing a high B—a note that doesn't come easily for a tenor, much less a baritone. Usually these higher notes are sung falsetto.

The soprano must have coloratura ability to sing the florid cadenza of "Dulcissime," as well as the stamina to sustain the low passages in "Amor volat."

Orff intended _Carmine Burana_ to be a theater piece, "a scenic cantata" with dancers and sets. The score describes it as "secular songs for soloists and choruses, accompanied by instruments and magic images." It's seldom presented that way, although many universities give performances with dancers, sometimes using Orff's arrangement for two pianos and percussion instead of the larger orchestra.

_Carmine Burana_ has been treated well on record, and among the two dozen considered here are a number of fine ones. For a recording of this work to be acceptable, orchestra and choruses must be strong, and the soloists able to cope with the enormous difficulties of their parts (although, for this music, characterization is more important than a beautiful voice). The many percussion effects should also be strongly stated. Orff has written into the closing pages of "O Fortuna" a series of grace notes for the bass drum just before the first beat. These occur five times over eleven measures toward the end of the chorus, and can produce a mighty effect when executed properly. Many conductors overlook this important percussion accent.

Wolfgang Sawallisch's 1956 recording was made with the composer present; a separate track at the end contains a 1:45 speech in German, in which Orff profusely compliments the performers. But despite Orff's accolades, this is hardly one of the piece's better recordings. The tenor, Paul Kuen, is the best of the soloists; the baritone, Marcel Cordes, is unconvincing in declamatory passages; and soprano Agnes Giebel cannot sing the staccato notes in "Dulcissime." The producers divided "Reie" and its parts into separate tracks, so this CD has three extra tracks. This recording wasn't particularly good when it was first released, and the transfer to CD is not flattering, with loud chorale passages sounding blasty and distorted. No texts are provided—not even a translation of Orff's speech.

Eugen Jochum's 1968 recording is his second (an earlier mono version with the Bavarian Radio Orchestra and Chorus was issued on American Decca). Jochum
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<td>Challey/Choristers of St Swithin's College/Choristers of St Swithin's College</td>
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<td>Friebreck de Burgho/New Philharmonic O &amp; Chorus/Windward School Boys' Choir</td>
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<td>63:33</td>
<td>Penelope Whiting-Clark, John Graham Hall, Donald Maxwell</td>
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<td>Jochumi/Berlin Opera O. &amp; Chorus</td>
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<td>Gerhard Janowitz, Gerhard Fischer-Dieskau</td>
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<td>Ruth-Margaret Putz, Michael Cousins, Barry McDaniell, Roland Herrmann</td>
<td>1973</td>
<td>27</td>
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<td>60:26</td>
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<td>Janice Harsany, Rudolf Petrik, Harun Pressell</td>
<td>1960</td>
<td>26</td>
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<td>51-46</td>
<td>Virginia Babikin, Clyde Hager, Guy Gardner</td>
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<td>25</td>
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<td>Thomas/Cleveland O. &amp; Chorus/Cleveland O. Boys' Choir</td>
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<td>1989</td>
<td>25</td>
<td>Yes</td>
<td>DDD</td>
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opts for fast tempi, to exciting effect, and Dietrich Fischer-Dieskau is a major plus—he easily accommodates the demanding baritone part, singing its highest notes without strain and with considerable beauty of tone. Gerhard Stolze is perfect as the roasting swan, but soprano Gundula Janowitz, superb in most of her part, simply cannot negotiate “Dulcis-" sine"; her final F is a desperate screech. The stereo sound is good for its age, if a bit bright and lacking in solid bass.

Vlčav Smetacek’s recording has the advantage of the Czech Philharmonic Orchestra and Chorus, who are magnificent. The chorus has a splendid, virile sound—essential to this score—and the male complement is unbeatable. Smetacek keeps things briskly moving—there’s a consistent sense of excitement. The tenor is adequate, but both baritone and soprano have Slavic wobbles that take some getting used to; neither do the highest notes come easily. Because of fast tempi and omitted verses in several of the songs, Smetacek’s performance is the shortest of all. Still, here are excellent sonics, splendid hall sound and presence, but a touch of overloading in a few loud choral passages.

Leopold Stokowski’s Houston recording is puzzlingly tame for this volatile conductor. Dynamics are exaggerated and often inappropriate (did Stokowski have a hand at the controls?); the reproduction is murky, lacking definition and impact; the soprano is unexceptional; and the baritone’s task is made much simpler by the tenor singing the higher parts of “Dies, nox et omnia” (not such a bad idea). Stokowski really brings out the timpani grace notes in the concluding “O Fortuna,” but this recording is not competitive. Like Smetacek, Stokowski omits the second verses of several songs; his recording is only a few seconds longer than Smetacek’s.

Robert Shaw’s 1980 version has the expected spectacular Telarc sonics, with the biggest, most solid bass drum imaginable. But Shaw lacks humor, and although the chorus sings very well, it sounds small, and the Atlanta Symphony is unable to provide the necessary masses of sound. The soloists are fine, but it’s excusable for Telarc to provide only four tracks for the entire work.

Seiji Ozawa has the distinction of having recorded Carmina Burana three times: twice for audio, once for video. This is music he really understands, and his 1969 Boston Symphony recording is stunning. Shirrell Minns is superb, at ease in the entire range of the part, and the tenor is fine. Soprano Evelyn Mandar is ill-at ease in “Dulcissime,” and doesn’t sing staccato as called for. The choruses are big and bold, and RCA supplied their best sonics—with plenty of bass and impact, and the warmth of Symphony Hall well-captured. Ozawa’s Berlin recording of almost two decades later also has much to offer. Male soloists are superb, Edit Gruherova fearless in “Dulcissime.” The Japanese chorus is impeccable, but lacks a solid baritone/bass sound. Engineering is generally good, but some perspectives are askew. For an Ozawa Carmina Burana, the BSO is the one to have — unless you want his Berlin video (see below).

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recording is often exciting. A score such as this is made to order for this imaginative conductor, but things occasionally get a bit out of hand, particularly with the chorus. I like the perspectives, and if one of the soloists was recorded in New York and dubbed-in, as is suggested by the credits, it's been done well.

Antal Doráti's 1976 recording was originally issued in London's Phase Four series, but there's no exaggeration of left and right. The distinctive sound of Kingsway Hall was well-captured by the engineers, but Doráti's soloists are unexceptional.

One would expect that a score such as this would inspire Zubin Mehta, but his Teldec recording contains little above the routine, and his use of an alto instead of a tenor eliminates the strained sound desired by Orff. Taped at The Maltings, Snape, this very resonant recording lacks impact on percussion.

James Levine's performance originated at the 1984 Ravinia Festival. The recording site is not identified, but it's a resonant if distant pickup. Levine—superb in so many operatic recordings—is here prosaic. Philip Creech, a high tenor, sings his part easily; soprano June Anderson is outstanding. Bernd Weikl rather strained.

The Naxos budget CD conducted by Gunzenhauser is well-recorded, but the conductor's approach is timid when it should be bold. Coordination between orchestra and chorus is slack, and neither baritone nor soprano is up to the demands of their music.

The budget LaserLight version recorded with the Prague Festival Orchestra and Chorus conducted by Pavel Urbanek is scant value, even at the price. Sonics are distant, orchestra and chorus are enthusiastic but sloppy, and the unidentified soloists are weak—particularly the soprano, whose final sound in 'Dulcissime' is a squeak rather than a note.

Ilya Stalin's Danacord recording is uncompetitive. The pickup is distant, the chorus sounds small, and there's little tension from the podium. However, the contributions of Anne Margrethe Dahl will, for some, make this worth owning. Her 'Dulcissime,' effortlessly angelic and pure, creates a moment of magic. (And, at a mere 0:45, Dahl's is still the longest 'Dulcissime' of all.)

Rafael Frühbeck de Burgos's 1965 EMI recording is an outstanding performance—rhythmically imaginative and solid, with a terrific orchestra and chorus matched by excellent soloists. Although basically well-balanced, the recording lacks bass, and the chorus is quite shrill in loud passages.

André Previn's 1974 EMI recording, also made in Kingsway Hall, has for years—and for good reason—been considered one of the best. In spite of his dynamic approach, he doesn't place enough emphasis on the timpani grace notes in 'O Fortuna.' The sound lacks bass, the chorus is sometimes distorted, and the clarity of the digital remastering lets us hear a cough right at the beginning of 'Dulcissime.'

Rafael Frühbeck de Burgos's 1965 EMI recording is an outstanding performance—rhythmically imaginative and solid, with a terrific orchestra and chorus matched by excellent soloists.

Herbert Blomstedt's London version, though beautifully played, with fine orchestra and choruses, is quite tame and never catches fire. Tenor Daniecki is imaginative in his brief solo, but not much else happens to capture the listener's imagination. The sound is very wide in dynamic range, with plenty of impact, but there's not much presence or hall sound.

Franz Welser-Möst's performance boasts incredibly high energy, with a superb orchestra and chorus. Barbara Hendricks isn't totally at ease, and using a countertenor is not what the composer intended, but the percussion accents are right, the sonic quality impressive.

Herbert Kegel's recording has been consistently in the catalog since it was first released in the early '70s. Considering the quality of more recent contenders, it's time to retire this one. The performance is unexceptional, the sonics constrasted. Around the same time, Ferdinand Leitner made a recording in Leipzig, now reissued on Acanta. Any qualities of the performance are obliterated by the dreadful quality of the CD transfer's rampant distortion.

Eugene Ormandy's 1960 Columbia recording has been beautifully transferred to mid-price CD. It's a strong, vivid, imaginative performance, impeccably played, and the Rutgers University Chorus's enthusiastic contribution is a major plus. Soloists are fine, although...
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Janice Harsanyi does not sing the ending of “Dulcississime” staccato. Richard Hickox opts for stately tempi, which give impressive majesty to the opening and closing choruses; but this deliberate approach isn’t very exciting. His forces are splendid, soloists fine (though the soprano scoops a bit). The sound lacks impact.

Riccardo Muti’s Carmina Burana is an intense listening experience, with explosive timpani accents that are mightily effective (although he, too, misses the timpani grace notes at the end of “O Fortuna”). Augér is a superlative soprano soloist, but tenor John van Kesteren is a fragile swan. The overall sound is a bit dry, with soloists rather distant.

Riccardo Chailly’s recently deleted London recording has odd rhythmic quirks and some garbled choral/orchestral coordination. (Chailly, too, misses the timpani grace notes.) His soloists are prosaic, and the use of a countertenor is inappropriate. Still, this is one of London’s better recordings, with some resounding bass (but only 15 Cueing tracks).

Those with a taste for the bizarre might investigate a Newport Classic CD with Robert DeCormier conducting a trio of so-so soloists and a small-sounding New York Choral Society. The entire orchestral score is performed on synthesizers in an unsuccessful attempt to re-create orchestral sounds, with occasional whimsical effects that I find highly inappropriate; a nightmarish Carmina Burana by any standard.

Those with a taste for the bizarre might investigate Robert DeCormier’s synthesizer version.

Two videos currently exist of Carmina Burana, both of great interest though neither is a staged performance. Seiji Ozawa leads the Berlin Philharmonic, the Shin-Yu Kai Chorus, the Boys Choir of the States und Domchor Berlin, and soprano Kathleen Battle, tenor Frank Lopardo, and baritone Thomas Allen. This magnificent performance was recorded a year after Ozawa’s 1988 Philips CD, which features the same forces with different soloists. For me, the Japanese chorus (which sings the entire score from memory) doesn’t have sufficiently powerful male voices. The sound is superb, but much of the camera work is annoying: at the beginning of each section, the screen is filled too long with the title of the section just begun, and the cue for the last section starts early. Aside from this, the camera is usually in the right place. Kathleen Battle is spectacular, and it’s amusing to observe the reactions of several orchestra members to her splendid “Dulcissimo.” There are no subtitles, but texts and translations are provided. The laserdisc is quite superior to the VHS tape (Philips laserdisc 070 231-1, VHS 070 231-5).

The other video is a Kultur International Films presentation recorded during a 1981 performance during the Cardiff Festival of Choirs in Wales, with Walter Weller conducting the Cardiff Polyphonic and Dyfed Choirs, the Llandaff Cathedral Choristers, and the Royal Philharmonic. Soloists are Norma Burrowes, Kenneth Bowen, and Thomas Allen. The choruses are outstanding in this dynamic, powerful performance recorded in well-balanced, monophonic sound (with subtitles).

Which to own? The RCA Ozawa, followed by (though not necessarily in this order): Frühbeck de Burgos, Previn, Muti, Ormandy, and Welser-Möst. And the Ozawa video, particularly on laser, is an exhilarating listening and viewing experience.

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**Discwasher V.R.P. RECORD SLEEVES**

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<tr>
<td>RICE SLEEVES (10)</td>
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**2 RECORD PRESERVATIVE (3oz) . . . 24**

**3 RECORD CLEANER . . . 15**

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The last time this statute was so soundly flouted in a major classical work was in 1987, when Reference Recordings released Minoru Najima’s performance of the Liszt B-minor Sonata—certainly the best recording of this work, and one of the best performances in stereo.

The difference with James Judd’s Mundi Mahler 1 is that it’s one of the best recordings, and one of the better performances, of a central-repertoire orchestral work—a combination rarely heard since the glory days of stereo recording, roughly five years either side of 1960, when CBS, Decca, and RCA frequently produced releases of such quality.

Engineer Peter McGrath captures an enormous sound from the Florida orchestra, impressive particularly in its depth. On climaxes, the sound seems almost to overfill the bounds of Ft. Lauderdale’s 2688-seat Broward Center for the Performing Arts; the dynamic range is such that you’ll need to listen at realistic orchestral volume to hear the quiet portions. Timbres are true if just a little bright. Though individual instruments aren’t illuminated with quite the laserbeam focus of Blumlein-miked recordings (an effect I often find artificial), the weight and movement of the music among the orchestral sections is delineated marvelously—especially attention-grabbing because Judd divides his violins left-right, and spreads cellos and basses across the middle. (McGrath, as in his recordings of the Philharmonia Baroque, relies primarily on a stereo Schoeps Omnisphere microphone, adding for these larger forces three other mike pairs—omnis and cardiods—to fill out the details.) There’s a solid presentation of the hall’s dimensions, and great ambience—the miking picks up a lot of indirect sound. Low bass is so true that you’ll hear little of the opening low A in the basses unless you’re listening with a subwoofer. In short, this is one of the best orchestral recordings of the digital era, and the best of Mahler 1 since John McClure recorded Bruno Walter for Columbia in 1961.

All of this would merely confirm Holt’s Law if Judd’s performance were not so good. To give a quick idea of how good, here’s a list of recorded performances I find better: Litton; Bernstein/DG, Walter, Horenstein, maybe Kubelik, maybe Solti/LSO. Those I find less good? Too many to list. Judd’s performance is overall quite measured—which is to say slow. When he keeps things together (as in most of I-III), this conveys a sense of ease appropriate to this youthful work. When he loses concentration, as in part of IV, the orchestral lines sometimes lose their relationships to one another. But make no mistake: Judd’s conducting at the end of IV, beginning with the contrapuntal opening to the coda and running through the final climax, is exciting.

Surprisingly for an American regional orchestra, the country dance of II is pulled off very...German: gruff and peasant-like, with a flexible line and natural string portamento. The Klezmer music in III is also done idiosyncratically.

Judd includes the “Blumine” movement that appeared as the second of five movements in Mahler’s original score, and which the composer excised early on. Here “Blumine” truly swings, in simply the best performance I’ve heard on record. Instead of playing up the movement’s obvious sentimentality, Judd’s vision is spectral, spooky, the detached string lines suggesting techniques Mahler was to employ much later and to great metaphysical effect in Symphonies 9 and 10.

Harmonia Mundi’s customary care is evident even in the physical production of the CD. Executive Producer Robina Young has insisted that “Blumine” appear as the last track on the CD—after the four movements of the conventional Symphony—rather than in second position. This is the only correct arrangement. The casual listener will hear in sequence the four-movement work in the composer intended. To hear the five-movement symphony will merely require reprogramming the CD player.

This new Mahler 1 is a desert-island disc for audiophiles and music-lovers alike.

—Kevin Conklin
Glenn Gould’s third and final Goldberg Variations, now released for the first time.

**BACH: Goldberg Variations, Three—Part Inventions 2–15 (Sinfonias)**

Glenn Gould, piano
Sony SMK 52685 (mono CD only), Kenneth Abeling, remix eng.; Andrew Kazdin, prod. ADD. TT: 61:25

Among the newest Bach issues in Sony’s Glenn Gould Edition are the six Partitas and miscellaneous pieces (SM2K 52597), the second book of the Well-Tempered Clavier (SM2K 52603), the first keyboard concerto (coupled with the second concerto of Beethoven, both from live sources with an orchestra from the Leningrad Conservatory), and, in many ways most interesting of all, the mono performances listed above.

These Goldberg Variations date from the 1959 Salzburg Festival and feature close-up recording to minimize audience noise. The performance, replete with the pianist’s usual idiosyncrasies, is, as always, fascinating. My initial impression was that the tempi overall were slightly faster than in the famous 1955 recording, but in fact there is only about a minute and a half difference between them. Occasionally, performance decisions, usually in the direction of super speeds, seem perverse, no matter how brilliant the playing. On the other hand, Variation 7, which Bach marked into his own score as a Gigue, is here slowed down to a bucolic Siciliana. The part writing, typical of Gould with his often ubiquitous detaché articulation (not really imitative of the harpsichord at all), is amazingly clear, however, and the sense of continuity created by the manner in which he proceeds from one variation to another greatly benefits the direction and architecture of the piece. One thing can be sensed: in spite of his dislike of the audience environment, here Gould seems to me to be responding more to his listeners than in his commercial recordings of the Variations.

The disc is filled out with what is billed as a first release of the three-part Sinfonias, whose 1957 broadcast from Moscow, for technical reasons, did not include the opening C piece. The remaining pieces are played in Gould’s own order, and the renditions again seem to be based to some degree on audience presence. As fascinating as his performances can be, these 24 or so minutes, because of their often serious distortion (tracks 35, 37, 43, and 45, among others), are only recommendable to the Gould collector who must have everything.

—Igor Kipnis

**COPLAND: Music for Films**

The Red Pony*; Our Town, The Heirress Suite; Music for Movies, Prairie Journal (Music for Radio)
Leonard Slatin, St. Louis Symphony
RCA 61699-2 (CD only). William Hoekstra, eng.; Joanna Nikrenz,* Jay David Saks, prods. DDD. TT: 67:09

**COPLAND/WILLIAMS: Music for Stage and Screen**

Copland: The Red Pony, Quiet City,*+ Williams: Suite from Born on the Fourth of July,* The Reivers
John Williams, Boston Pops Orchestra; Tim Morris,* trumpet; Laurence Thorsen,* narrator
Sony SK 64147 (CD only). Bud Graham, eng.; Thomas Z. Shepard, prod. DDD. TT: 68:34

Two excellent new collections of Copland film music, including the previously unrecorded suite from The Heiress.

In 1949, Aaron Copland received his only Academy Award—for his music for The Heiress—yet never drew upon the score for a concert suite. The music is here heard on its own for the first time, in a posthumous arrangement by Arthur Freed.

Oscar was right. The score followed a deft line of commentary and atmosphere for an intensively conversational film, which itself toed a fine line between ironical thwarted romance and a comedy of manners set in 1850s New York. Mr. Freed has restored Copland’s original Prelude, which had been rewritten for the film to highlight a conventional rendition of J.P. Martin’s popular air, Plaisir d’Amour. In the rewrite, Copland stated a strong motto theme over the Paramount logo and the opening title card before shifting gears into an uncharacteristically schmaltzy Plaisir. Yet the real Copland bubbles under the surface throughout, reasserting himself unequivocally at the moment his own title card appears on the screen. Hear the suite, see the film (available on LD), and decide which is really the most effective. *Music for Movies* is a set of five exquisite...
minatures from Of Mice and Men, The City, and Our Town. Prairie Journal, a work from the mid-’30s, is ostensibly a style study in the idiom which came to be called Copland for many listeners—Americana in music. Derived from Copland’s Parisian studies with Nadia Boulanger, and his exposure to the works of Les Six and Stravinsky, this idiom would provide the post-WWII generation of film composers with an alternative to the Central European derivations of the Entertite generation of emigré composers who had been the bulwarks of American film music until the late ’40s.

Common to both recordings is The Red Pony—perhaps the culmination of the idiom, and, in fact, Copland’s penultimate word on instantly accessible Americana. Except for the 1956 Tender Land, subsequent works, including the 1961 film score Something Wild, harden back to the composer’s early dissonant abstractions.

Slatkin/SLSO take on each of these works with their accustomed attention to detail, flow, and character. As noted by JA in June, we’re nearing the end of the line for recordings engineered by the late William Hoekstra. This one, as much as any, serves as an example of believable space with no sacrifice of detail and nuance—the hallmark of Hoekstra’s work over the years.

But Graham has taken a very different approach to the Boston Pops program. Perhaps in consideration of the music’s origins as (mostly) film music, the orchestra is extensively miked and mixed, studio style, but in Symphony Hall—some studio!—and done so well that there’s virtually no sense of some officious, all-knowing mixer god hovering over us, spoon-feeding us this incredibly heightened details. It’s one of those rare instances in which we can have our cake and eat it too.

Williams’s approach to The Red Pony is considerably more fond and loving than Slatkin’s rather matter-of-fact rendering. Those who have considered this suite to be too long and repetitious could have their views modified by Williams’s performance. Williams is no less sympathetic to Quiet City, a non–film work which had its origins in a failed theater piece. This recording of the well-known concert work can take its place as the best now available on CD, due as much to Pops principal trumpeter Tim Morrison, and English hornist Lawrence Thorstenberg, as to Williams or to anyone else.

Born on the Fourth of July is a film whose seriousness breaks Williams’s stereotype as an Indiana Jones thumper nearly as much as Schneider’s List does, and this, too, is a showcase for Tim Morrison, with its own credit.

But the show-stealer, and the reason to have this CD, if for no other, is The Reivers, an 18-minute suite from one of Williams’s earliest films, from 1969. Williams and the Pops are joined by Burgess Meredith narrating William Faulkner’s cautionary tale of a youngster’s misbehavior with an early motor car in the South, in 1903. Meredith goes beyond nostalgia to evoke a sense of awe, wonder, and ecstasy to have been alive for so long and to recall such delightfully wicked events from the distant past. It helps considerably that Meredith’s voice has been mixed in reasonable and believable proportion to the music. Although the usual practice these days is to overdub narrations in post-production, this performance has the mood and inflection of realtime. Bravo to all concerned.

—Richard Schneider

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Einstein on the Beach, a five-hour-long piece of music theater, is a portrait of Einstein as a character, with no real plot or narrative, the audience being required to complete for itself what is implied by the cryptic texts. Glass is delighted with the recording, admitting that, since its composition in 1976, he and his musicians have been learning how to play the work, both technically and stylistically. Elektra has done a wonderful job; the recording is crisp and clear, presenting speakers and instrumentalists in the most atmospheric fashion. Every facet of this production smacks of time—neither of the thick booklet of essays, analysis, texts, photographs, and drawings of the sets.

Hydrogen Jukebox was the outcome of a collaboration between Glass and Allen Ginsberg on a benefit piece for the Vietnam Veteran Theater Company. Happy with the work they devised together, Richard Foreman, they decided to extend the piece into an evening-long "Portrait of America." After six weeks of sorting through Ginsberg's poems, they selected some 18 texts commenting on the most salient social issues: war, ecology, the sexual revolution, and the influence of Eastern religion; personal poems were also interspersed.

This makes for a typical Glass creation: neither opera, musical, nor song cycle. Jukebox has elements of all of these, expressed in unsophisticated harmony via constantly varied instrumentation and, of course, pulses, rhythms, and melodic phrases. Again, sonic production and presentation are exemplary, and the disc is certainly good value for money if you know and like Glass's style.

Anima Mundi is a "poem to biological diversity" with no text. The soundtrack to a Godfrey Reggio video, it is easily the most accessible of the discs reviewed here, the music eminently evocative of its titles: "The Journey," "The Ark," "The Garden," "The Beginning," "Living Waters," "Perpetual Motion," and "The Witness." With strings, winds, brass, and percussion, plus eight singers (who intone, screech, and pant!), this is a fine, colorful work that has been equally vividly recorded.

The 61-minute-long Music with Changing Parts recordings, remastered from the 1971 originals, features Glass with seven musicians on a wide variety of instruments. Indeed, Glass admits that his ensemble was not fixed in the early '70s, when the piece was written—anyone who turned up for rehearsals could play along. Since then, violin and trumpet have been phased out of the group, but they can still be heard here. Although Glass took the work on tour throughout the States and Europe in the early '70s, he was not interested in following-up its implications, and rarely performed it after that, finding it "too spacy." However, it did prove that he could hold his audience over a prolonged period of time, and encouraged the creation of the more ambitious operas.

Yet it is the shorter pieces on the disc containing Music in Similar Motion (1969) that have remained in Glass's concert repertoire. Composed according to the additive process, in which eighth-notes are added or subtracted to the repeated figure, their ultimate performance length can easily be predetermined. Music in Contrary Motion not only has an expanding figure, but also pedal notes which give it a harmony of sorts. Only Music in Fifths is in closed form; its length is constant, as the piece finishes when the fifth round of repetitions has been completed. This is the most spartan disc of the five, Two Pages and Contrary Motion being for electric organ and piano alone, the other two works only adding soprano saxophones and electronics, and it most readily demonstrates the uncomplicated style of Glass's minimalism.

—Barbara Jahn

STRAINSKY: The Rite of Spring

BERG: Chamber Concerto

Gunther Schuller, Ensembles of the New England Conservatory: Rudolf Kolisch, violin; Russell Sherman, piano.

GM Recordings, GM2033CD (CD only). Robert A. Richford, Anthony McKenna, David Reffkin, Robert Wilson, Clark Gablehouse, Robert DiDonica, engs.; Gunther Schuller, prod. ADD. TT: 74:39

STRAINSKI: The Rite of Spring, Pétrouchka (1947 Suite)

Mart Jansons, Oslo Philharmonic; Per Hannisdal, bassoon; Gonzalo Moreno, piano; Jan Fr. Christiansen, trumpet.

EMI 7 54992 Z (CD only). Mark Vigars, Bob Whitney, Matthew Cocker, engs.; John Fraser, prod. ADD. TT: 47:25.

With The Rite of Spring as a common denominator, these two distinctly different recordings share an overall rhythmic incisiveness and respect for Stravinsky's score. Schuller takes a bit more license in "The Sacrifice" by drawing out phrases, but both readings come in at about 33 minutes. The Schuller CD is preferable, largely due to its inclusion of Berg's Chamber Concerto in an insightful interpretation full of intelligent nuance. The GM recording is also more satisfyingly realistic, despite its age (the Stravinsky was recorded in late 1971, the Berg in early 1972). It offers a much better soundstage, with more natural depth and balance than EMI's brand-new DDD recording. While neither Schuller nor Jansons offers serious competition to Stravinsky's own Sony recording (or the superb Bernstein on Columbia Masterworks), neither traversal is fatally flawed.

Schuller's smooth, well-integrated performance of Berg's Chamber Concerto offers an appealing contrast to the dramatic Abbado on Columbia with Serkin/Stern, and the analytical Boulez on DG with Barenboim/Zukerman (the latter available on a fine, mid-priced, all-Berg CD). The EMI disc, which includes the 1947 Pétrouchka Suite, is lively and idiomatic, lacking only the final degree of intangible interpretative insight. Jansons clearly has a feel for Stravinsky, and his handling of the Oslo Philharmonic is sure and decisive. While not perfunctory, there is something...
missing in the overall shading of the music, however. The recording is detailed but somewhat steely during crescendos.

Both discs are worth owning if one's interest in Stravinsky extends past the casual. Although neither can be considered definitive, the Schuller offers an attractive coupling with the Berg Concerto. Jansons gets the job done, if at times in a bit too workmanlike a fashion.—Carl Baugher

TCHAIKOVSKY: Eugene Onegin
Thomas Hampson, Eugene Onegin; Kiri Te Kanawa, Tatiana; Neil Rosenschein, Lensky; others; Welsh National Opera Chorus & Orchestra, Sir Charles Mackerras
EMI 55904 2 (2 CDs only). John Fraser, prod. DDD. TT: 2:22:17

This juicy-sounding, nicely produced Onegin is a relatively good bet, particularly if you don’t mind the opera sung in English. For some reason it bothers me less than hearing Italian or French operas in the vernacular; much to this cast’s credit, most of the text can be understood and doesn’t sound awkward.

Hampson is a fine Onegin, with just the right chill in the early acts and great ruefulness in the last—and his tone is stunning. Te Kanawa responds well to Tatiana’s plight, and catches the many shifts of mood in the letter scene. She’s quite weak later in the opera, though, never mustering real depth of feeling; the final scene is only half there. Neil Rosenschein’s Lensky is well-nuanced if a bit strained, and John Con-

Dohnányi’s new Dutchman—perfect in every way but one.

nell is a rich-toned Gremian. The others are excellent.

As are Mackerras and his Welsh forces. This is good; but if I were going for only one, I’d go for the recent Philips recording with Dmitri Hvorostovsky in the title role.

—Robert Levine

VERDI: Don Carlo
Luciano Pavarotti, Don Carlo; Daniela Dessi, Elisabetta; Samuel Ramey, Filippo II; Paolo Coni, Rodrigo; Luciana D’Intino, Eboli; Alexander Ansinino, Grand Inquisitor; others; Orchestra & Chorus of La Scala, Milan; Riccardo Muti
EMI 54867 2 (3 CDs only). David Groves, prod. DDD. TT: 2:52:50

There are 2½ reasons to own this live recording of the four-act version of Don Carlo, and they’re not nearly enough. The first is Pavarotti. The La Scala audience booted him for this run of 1992 performances, but you won’t find any reason to heckle him here; whatever he did wrong has apparently been patched up, either from other performances or in the studio. He’s in glorious voice, and actually seems involved in Carlo’s political and romantic problems—a stunning performance.

Reason #2 is Muti’s leadership: tight, handsome, sensitive to the intimate moments, and aware of the grandeur of both the individual passions and the public displays. And his orchestra and chorus respond magnificently.

The half reason is Ramey’s Filippo—beautifully sung and imperious in the early acts, he falls down in his big moments: his soliloquy lacks nobility and tragedy, and the scene with the weak Grand Inquisitor goes by like a chance meeting of two bassetes. He’s got the voice; he lacks the depth.

The rest of the cast is pretty bad, even by today’s standards. Dessi is far too light for Elisabetta. Just when you hope the voice will open up, it thins out, and this affects her characterization as well. D’Intino is a nice singer, but she, too, lacks the stature for a character like Eboli. And Coni sounds as if he’d better rethink his way of singing—spread tone above the staff and above mezzo-forte.

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The sound is gorgeous. But this is, even including Pavarotti, a Don Carlo. If you love this opera, five–six stars with Domingo or Bergonzi, both with excellent others in the casts.—Robert Levine

WAGNER: Der Fliegende Holländer
Robert Hale, Holländer; Hildegard Behrens, Senta; Jose de Germont, Kurt Rydl, Dalas; Uwe Heilmann, Steuermann; Iris Vermillion, Mary; Vienna State Opera Chorus, Vienna Philharmonic, Christoph von Dohnanyi; London 436 418–2 (2 CDs only); Michael Haas, Morton Winding, Christopher Pope, prods.; James Lock, Jonathan Stokes, Colin Moorfoot, Simon Eadon, engs. DDD. TT: 2:25:07

This Flying Dutchman is one of the best-sounding ever. Everyone sings very well, the Vienna Philharmonic (which doubles as the Vienna State Opera’s pit band) plays the score with all the intimate familiarity of an ensemble that has played it literally hundreds of times; conductor Dohnányi pilots his crew through the crests and troughs of Wagner’s swelling sea–music with as much precision and power as has ever been wielded; and the septet of producers and engineers delivers a sound-scape in the grand old London/Decca/VPO tradition: deep, dark, rich, full, resonant, and woodily German, all overlaid with a sweet, mellow, Viennese sheen. But something’s missing.

Of the soloists, only Josef Prosrichtka turns in a truly heroic performance. His expressive commitment to the thankless role of Erik—the most under-appreciated romantic tenor in all of Wagner—is the only one that smacks consistently of passion. The fact that his voice is so ringingly clear doesn’t hurt things a bit.

Uwe Heilmann has a properly sweet, melodious way—reminiscent of Wunderlich’s—with Wagner’s only Irish–tenor role, the Steuermann. And Iris Vermillion is probably the best Mary on record—her dead–on dramatic impulses in this tiny part are never at the expense of her singing.

Kurt Rydl manages to avoid singing the role of Senta’s father as the usual menda–buffoon. This Daland shows more than a token affection for his preoccupied daughter, whom he suddenly sees as his ticket to the Dutchman’s shipful of gold. Rydl’s voice continues to be one of the wonders of the operatic stage: effortlessly powerful, deep, and dark, with a wide, consistently open range.

Despite her mostly awful direction, Hildegard Behrens is in excellent voice here, free of the swoops and wobbles that have lately plagued her (this set was taped three years ago). Her Senta is no luscious girl, but an emotionally mature woman who seems to have deliberately chosen her fate as the doomed Dutchman’s doomed bride—there’s strength of character here, if little tension. Still, it’s wonderful to hear the world’s reigning dramatic soprano tackle this minor Wagner heroine with such discipline and power: Behrens’s Act II duet singing with Hale is one glorious chunk of singing.

Like so many Wagner heroes and heroines, the Dutchman is simultaneously all too human and more than human. Robert Hale brings to the role a full, liquid baritone, considerable feeling and the tools with which to express that feeling. But for all his insight, Hale’s Dutchman never seems more than a decent, sincere, sensitive guy; there’s none of the passion that a man desperately sick of a century or two of divinely imposed wandering must feel, a passion that Hans Hotter, for instance—in a 1944 Munich recording once available on Rodolphe RPC 32515—could overwhelmingly deliver. Hale’s deficiencies in this area are most painfully felt at the end of Act III, where they’re most needed. In his final two passages, in which the Dutchman at last reveals who he is, there should be some hint of the eternal torment to which he is about to re–dem himself in the face of his apparent abandonment by Senta. Hale sings the notes expertly enough, but lacks the dramatic edge and the opera just sort of...ends. As well as I know this work, I still looked up after the final chord to ask my CD player, “You mean that’s it?”

Aside from Prosrichtka, whatever passion contained in this exceptionally well–crafted recording of Wagner’s most choral opera is claimed by the Vienna State Opera Chorus, here directed by Helmut Froschauer and long–time Bayreuth chorus director Norbert Balatsch. These men and women could sing the score backward in their sleep (although Daland’s crew sounds a bit ragged in Act I), and they have a good enough time here that I just kept grinning whenever they sang. And the Dutchman’s crew—which tends to sound as anemic on record as it usually does on stage—for once sounds at least as strong and gutsy as Daland’s. Their Act III outburst is powerful instead of the usual barely–listenable croaking overpowered by the orchestra.

Though Dohnányi’s leadership falters somewhat in the Overture and Act III, the orchestra sounding a bit sluggish, diminished, and lacking in heft, elsewhere his direction is intelligent, incisive, and powerful without being overblown—the last a temptation too many conductors, thinking they’re conducting Götterdämmerung instead of Holländer’s relatively spacious score, fall prey to.

But does the world—do you—need a “reasonable” Dutchman, however intelligent? If it’s true that Wagner without passion is Wagner without Wagner, then I think the answer has to be “No,” regardless of how well such a recording might be sung and played—and this one is sung and played very well indeed. There’s nothing wrong with what’s here; there’s just not enough of what makes a Wagner recording a necessary one. For urgency, commitment, and hell–bent–for–leather singing, try Klemperer (EMI), Doráti (London), and Nelsson (Philips)—all currently in print.

And search the used bins for the most exciting Dutchman (but the worst Senta ever): Hans Hotter, with Clemens Krauss (Rodophe).

—Richard Lehnhert

OSWALD VON WOLKENSTEIN: Songs
Ensemble Sequenza, Barbara Thornton; Benjamin Bagby, director
Deutsche Harmonia Mundi 05472–77302–2 (CD only). Klaus Neumann, prod.; Barbara Valentín, eng. DDD. TT: 75:50

Oswald von Wolkenstein (1376–1445), when he wasn’t turning out dufftiful ditties about the Virgin, was either alternately or simultaneously cynical and racy. If he wasn’t so clever about it, it would get pretty wearing. Fortunately, when he’s in his worldly–weary vassal persona, he avoids being of the inevitable self–pityy; and when he’s feeling horny, he’s delightfully explicit about just what he’d like to be doing. As a result, you can’t help but like the guy—even if many of his songs are written to contrafacta (that means he stole the tunes). My faithful readers will have already encountered Es seiss dort her (from the Newberry Consort), and will be pleased to note that Sequenza does all the good verses as well; now, the one I love is Fliege, little witch, which means, loosely translated, “It’s spring, and I’m glad they haven’t invented women’s underwear yet.” We also get several of Oswald’s more–or–less autobiographical songs which will greatly interest social historians, or anyone who thinks that politics has somehow changed in the last half–millenium. There’s also some politically incorrect discussion of married life and child abuse.

Sequentia have already proven themselves able interpreters of this sort of reper–toire; if I prefer Drew Minter to Benjamin Bagby, it’s not to disparage the latter. It’s true that some of Oswald’s (or whoever’s) melodies were of little threat to Landini, but they suit their texts, and are very well played on this disc. Sound is perhaps a touch wet, but it’s also natural and open. Von Wolkenstein is certainly not for everyone, but if you’ve read this far, he’ll probably do.

—Les Berkeley

CLASSICAL COLLECTIONS

NATHANIEL ROSEN: In Concert
Shostakovich: Cello Concerto 1, Tchaikovsky: Variations on a Rococo Theme, Pizzicato Capriccioso, Nocturne
Nathaniel Rosen, cello; Emil Tabakov, Sofia PO John Marks [MR 3 CD only]. No eng., prod., or SPARS listed. TT: 62:30
John Marks Records, 19 Wright Avenue, Wakefield, RI 02879; (800) 288–2007.

SCHUBERT: Trio for Piano, Violin, & Cello in E–Flat; Sonatina for Violin & Piano in g
Arturo Delmoni, violin; Nathaniel Rosen, cello; Edward Auer, piano
Clearity Recordings, PO. Box 41407, San Francisco, CA 94141; (415) 626–7540.

ARTURO DELMONI: My Mother Taught Me Music
Music by Brahms, D’Ambrosio, Dvorák, Fauré, Gluck, Kreisler, Massenet, Mendelssohn, Paradis, Sarasate, Smetana, Tartini, Valdez, Vieuxtemps Delmoni, violin; Meg Bachelder, piano
John Marks [MR 1 CD]. David Hancock, eng.; Bruce Faulke, prod. No SPARS code. TT: 52:51

Although combining these three discs in a single review might appear arbitrary,
there is logic to it. Arturo Delmoni, the violinist whose recent career has been closely followed by Stereophile, appears on two of them; cellist Nathaniel Rosen, the 1978 Tchaikovsky Competition gold-medalist, also plays on two of the discs, and two of the recordings are on the relatively new John Marks Records audiophile label. With the pedigrees involved, one might expect a musical and sonic feast from this menu. And one would be right—for the most part.

This Songs My Mother Taught Me is the same recording that has appeared on Mobile Fidelity CD and North Star LP (reviewed and highly recommended in Vol.11 No.6, p.189). I find the John Marks version to sound slightly leaner overall, with marginally clearer piano textures, crispier attacks, and perhaps a bit more hall depth and air around the instruments. But the differences are small. The North Star LP, on the other hand, exhibits a markedly richer, warmer sound on my system than either CD. But in comparison to the wonderful playing of the musicians, the sonic differences become insignificant.

On the other John Marks release, Nathaniel Rosen in Concert, both the musicianship and the audio quality are quite absorbing. Captured in what sounds like a large, resonant hall, Rosen and the Bulgarian orchestra under Emil Tabakov tackle Shostakovich's Cello Concerto 1 with fervor. Theirs is an angst-ridden interpretation, far from the understated lyricism evinced by the work's dedicatee, Mstislav Rostropovich, with Ormandy/Philadelphia on Columbia LP (unavailable on CD). Rosen's bowing is at times brutally vigorous; and while mesmerizing in many passages, it also leads to a few technical miscues. (I presume these performances were recorded in "real time," with little or no editing.) This reading is worth having for the performance on its own terms, as well as for the contrast it presents to the versions by Rostropovich, Lynn Harrell (with Haitink/Concertgebouw on London), and Yo-Yo Ma (Ormandy/Philadelphia on CBS), who all present greater lyrical qualities and a less pronounced Soviet-nightmare darkness.

Tchaikovsky's Variations on a Rococo Theme receives an equally committed performance. Rosen's playing, while lacking the articulation of János Starker with Doráti/LSO on Mercury, is lush, round, and graceful, with phrasing nuances and broad tempo changes that lend a singular character to each variation.

The sound of this CD is as distinctive as the playing. Enormous amounts of air and depth are conveyed, along with remarkable fidelity of tonal color. Occasionally, however, there's a troubling "tinny" quality that overlays a sharp, metallic glaze on violins and flutes.

I also have a sonic bone to pick with the Clarity Recordings release of works by Schubert, featuring Delmoni, Rosen, and Edward Auer on piano. Here, the recorded warmth of the E-flat Trio billows to a distracting degree. The effect, like that of severely underdamped speakers, creates a barrier to the beautiful performance. On the sonata, without cello, things are much clearer—in fact, the sound is exemplary.

Regardless of audio quality, however, this performance of the trio is a significant one. Like Rosen and Tabakov in the Shostakovich concerto, the players take a dark view of the work. This is quite dis-
tinct from the more songful approach of the Stuttgart Piano Trio on Naxos (see “Records to Die For,” Vol.17 No.2). Although I don’t feel that the Auer/Delmoni/Rosen performance challenges that one, it comes close. The playing is impassioned and dramatic, exhibiting deft control of dynamics and tempo; but for me it lacks the gusto and rhythmic verve of the Stuttgart Trio. The Clarity release, though, does rank in the rarefied company of performances by Golub/Kaplan/Carr on Aras, Isostin/Steri/Rose on Sony Classical, and the Beaux Arts Trio on Philips.

—Robert Hessen

Jazz

CHET BAKER: Chet

Chet Baker, trumpet; Herbie Mann, flute; Pepper Adams, baritone sax; Bill Evans, piano; Kenny Burrell, guitar; Paul Chambers, bass; Philly Joe Jones, Connie Kay, drums


BENNY CARTER: Jazz Giant

Benny Carter, alto sax, trumpet; Ben Webster, tenor sax; Frank Rosolino, trombone; André Previn, piano; Jimmy Rowles, piano; Barney Kessel, guitar; Leroy Vinnegar, bass; Shelly Manne, drums


DUKE ELLINGTON/RAY BROWN: This One’s for Blanton

Duke Ellington, piano; Ray Brown, bass


BILL EVANS: Waltz for Debye

Bill Evans, piano; Scott LaFaro, bass; Paul Motian, drums


ART PEPPER: Smack Up

Art Pepper, alto sax; Jack Sheldon, trumpet; Pee Jee, piano; Jimmy Bond, bass; Frank Butler, drums

Analogue Productions AP 012 (LP/CD). Lester Koenig, prod.; Roy DuNann, eng.; Doug Sax, mastering. AAA/AAD. TT: 38:02

BEN WEBSTER: At the Renaissance

Ben Webster, tenor sax; Jimmy Rowles, piano; Jim Hall, guitar; Red Mitchell, bass; Frank Butler, drums


With the exception of Duke Ellington’s and Ray Brown’s 1973 tribute to bassist Jimmy Blanton, these recordings were taped between 1957 and 1961, which now can be seen as part of a golden age for jazz recording, if not for the jazz business. I played the Analogue Production LP of Ben Webster’s “At the Renaissance for a friend who saw Webster live in the late ’50s, and remembered him performing infrequently before sparse audiences. But he played like a dream, and this recording blew us away with its exquisite reproduction of the strength and subtlety of Webster’s breathy sax. Fans used to yell “Speak to me!” to their favorite players. That’s what Webster did, with his insinuating entrances, all wry suggestion and luring power, with his barking explosions and tipoeing ascensions, with his tense turn-arounds and his graceful easings-off. Listening to Ben Webster can be like watching the sun rise.

Evans plays a heart-breaking “My Foolish Heart,” and it is heart-breaking, too, to listen (more clearly than ever before) to several people in the audience talking while he played—and to the single person who clapped when Evans finished “My Romance.” In this case, the cymbals seem more spread-out on the LP, which has, again, marginally more presence.

Bill Evans appears as well on Chet Baker’s Chet, an album that was wisely designed to feature Baker’s ballad playing. The all-star group sustains the quiet mood of “Alone Together” with light-stepping ease. Baker sounds engaged here—intent rather than merely nonchalant. His solos are matched by those of Evans, Kenny Burrell, and by the underrated baritone saxophonist Pepper Adams. Chet was earlier reissued on an excellent-sounding OJC LP, the Analogue Productions LP and CD make less of a difference here, but the newer products again bring the music closer and emphasize the highs.

If Chet Baker was considered a romantically lost young man among White jazz musicians in the ’50s, the intense Art Pepper is commonly seen as beyond the pale. He was arrested a decade before, and his autobiography reveals that several of his recording dates were made when he was in a fog of drug abuse. Yet what a talent he had: a sharp, yearning tone, a bebopper’s agility on the horn, and a balladeer’s sensitivity. He sounded strong, inventive, and vulnerable—I imagine he was drawn to Ornette Coleman’s “Ornette: Lonesome” (in 1960!) because of its title.

Smack Up is one of his most distinguished recordings of the period, made more so by the fact that he was working in a congenial setting with musicians he knew well. It’s a joy to hear trumpeter Jack Sheldon play in a small-band setting, his rounded tones on the Ornette Coleman blues “Las Cuevas de Mario” providing an enlivening contrast to Pepper’s starker sounds. The Analogue Productions LP opens up more space in the recording than did my Contemporary LP, and the highs on both CD and LP were more natural to my ears than before.

Duke Ellington hired the astonishing young bassist Jimmy Blanton in late 1939 when Blanton was only 20. Less than three years later, he was dead from tuberculosis—but not before he helped revolutionize bass playing with his guitar-like runs, his facility with the high range of his instrument, and his melodic playing. Ellington recognized his talent at once and started writing for Blanton—giving him the melody of parts of “Jack the Bear,” for instance—and featuring his uniquely compact top-of-the-bass playing in a series of duets such as “Pitter Patter.”

This One’s for Blanton, which had previously been issued on a Pablo LP, is Ellington’s tribute to Blanton—and also to Ray Brown, for the session includes numbers, such as the “Fragmented Suite for Piano and Bass,” that Blanton never recorded. Brown and Ellington were recorded rather
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of their LP, except that, as I heard it on my
equipment, there is again an added reso-
nance—perhaps the result of the restored
bass—which makes the disc sound in some
ways more impressive than the MFSL LP,
yet not quite as natural. I recommend
the less expensive Chess LP reuse of
its uniformly high quality of
precision. Certainly, though, any audiophile
should derive lasting pleasure from MFSL's
CD or LP.

Although a less remarkable set, Goin' Away is almost as well-recorded. Van
gelder has chosen to move Hopkins's gui-
tar solos to the left while his singing is dead
center, which seems to me a mistake: But
Lightnin' Hopkins's deep, laconic voice is
beautifully reproduced on this Analogue
Productions LP, which creates the same
illusion of his presence. It's not an entirely
natural sound—we know he's singing into
a microphone. And the rhythm accom-
paniment, manfully attempted by jazz
players Leonard Gaskin and Herbie
Lovelle, seems to me unnecessary and dis-
tracting.

But I don't know of a recording that bet-
ter reproduces the aura of a Lightnin' Hop-
kins set. We can hear him improvise lyrics,
stumbling now and then over a rhyme or
a line. He plays the slow blues he's famous
for, offers a racial protest in "Stranger Here," and boogies the way his sister used
to on "Little Sister's Boogie." He sounds
tentionally countryish on "Business
You're Doing." Mostly in these loosely
constructed tunes he sounds worldly-
wise—disaffected but still energetic. (Dig-
tal fans can find a less realistic version of
this recording as part of Lightnin' Hopkins:
The Complete Prestige/Bluesville Recordings,
Prestige 7P-CD-4406-2.) Goin' Away is a
typically attractive Hopkins set, excellently
reproduced. Muddy Waters, Folk Singer is
hair-raising and indispensable.

—Michael Ullman

Rock

CHEAP TRICK: Wake Up with a Monster
Warner Bros. 45425-2 (CD); Ted Templeman, prod.;
Jeff Hendrickson, eng. AAD? TT: 49:02

Cheap Trick used to be a fun band. From
the mid-70s to the late '80s, you'd have
been hard-pressed to find another band
that could deliver pop n' roll with as many
catchy hooks, amusing lyrics (remember
"Surrender"?), and the ability to just flat-
out rock with the best of 'em. No surprise,
Cheap Trick leaped from the clubs of the
Midwest to full-blow Rock status.
But with the release of Wake Up with a
Monster, their first for Warners, it's all too
evident that the fun is over.

The album's not a total loss. "My Gang,"
"You're All I Wanna Do," and "Girl-
friends" are almost as good as anything the
quartet has ever done, and the Trick even
seems to find some of their old magic in
"Let Her Go." But combined with creepy, crum-
line rock ballads ("Never Run Out of
Love," "Tell Me Everything") and half-assed blues and funk efforts ("Cry Baby" and "Ride the Pony," respectively), it's clear that CT is struggling to regain what they used to do in their sleep.


—Steve Stoner

FIRESIGN THEATRE: Back from the Shadows
Mobile Fidelity Sound Lab MFCD 2–747 (2 CDs only). Richard Feih, prod.; Doug Black, eng. DAD. TT: 97:47

No one has ever been able to define what the Firesign Theatre does—not even themselves. They combine music, humor, astrology, television, old movies, and eight ears trained to mimic with deadly accuracy the many voices, rhythms, and tones that sing and chant around the electronic hearth of our global electronic village—the mass media. To appreciate them, it helps if you grew up on radio drama and television comedy, have taken a few courses in comparative religion, studied Native American cosmology, are up on current affairs, have spent time as a compulsive punster, know the novels of Hammett, Chandler, Joyce, and Pynchon, and the lyrics of Dylan and the Beatles; and, even today, it helps if you're just a tad stoned.

This document of Firesign's first tour in over a decade, and their first album of any kind by the complete quartet in almost as long, is more important for what it promises than for what it delivers. The good news is that Austin, Ossman, Proc- tor, and Bergman are together again and sounding like they're having a great time. The good news continues in that Back from the Shadows consists entirely of excerpts from the scripts of their first four classic albums, largely rewritten and updated for the '90s.

1 Waiting for the Electrician or Someone Like Him (1967), How Can You Be in Two Places at Once When You're Not Anywhere at All? (1969), Don't Crush That Dwarf, Hand Me the Pliers (1970), and I Think We're All Bees On This Bus (1971)—all available on great-sounding Mobile Fidelity CDs. Buy 'em.

The not-so-good news is that Firesign has so condensed and streamlined its original album-length audio plays that the versions on Shadows would be incomprehensible to anyone unfamiliar with those early albums. In that sense Shadows doesn't stand on its own, but plays an entirely different, more trivial role: almost a parody of parodies, it ends up being a commentary on those scripts, even a mass recreation of them, as the audiences of diehard fans speak the lines along with—or even before—the Firesigners themselves. It's a strange listening experience: throughout this 1½-hour set one hears the constant rumble of (mostly male) voices mumbling, laughing, even shouting out, singly or in chorus, their favorite lines—in most cases, this means virtually the entire script. Though the ultimate compliment, such rabid fandom also means that you almost had to have been there, and makes Back from the Shadows more souvenier than substance. Still, Shadows should prove mere prelude to FST's next studio album, The Illusion of Unity—their first as a quartet since 1982's underrated Shakespeare's Lost Comedy. They'd love to make it, Mobile Fidelity would love to release it. I'd love to hear it; all FST needs is a lot of cash up front. Here's hoping Shadows sells a million.

Sound is deep and realistic, as far as that goes. These concerts were complex multi-miked affairs with lots of sound effects and other electronic gimmackery—it's "radio" drama, after all. Besides, as Firesign itself would heckle: What is reality?

—Richard Lehner

TED HAWKINS: The Next Hundred Years

All I can imagine is that David Geffen must have had some sort of religious experience. I mean, the release of Pat Metheny's art-noise record might be explained by clout accrued from his previous million-sellers, but a disc by a near-60 street musician with a prison record but no prior sales record—what's going on here?

Not only that, but there's no attempt to gussy up Ted Hawkins' The Next Hundred Years with co-writers, synths, dance beats, or name guest artist—curiouser and curiouser. What we're offered is the soul and honesty of a man who has looked life's harshest trials in the face and emerged unembittered. Like good whiskey, Ted Hawkins' songs are distilled by age down to an essence that is both basic and rich.

On occasion, his lyrics achieve a sort of poetry: "Sugar is no good / Once it's cast among the white sand / What's the point / In pulling the grey hairs from among the black straws" ("The Good and the Bad"). More often they must rely on Hawkins' gravelly, expressive voice to endow them with a meaning and a feeling beyond the literal. Compared, as a singer, to Otis Redding and Sam Cooke, he is not of their caliber, but shares with them a vulnerability that is as affecting. Neither strictly blues nor country, his sound is the kind of rural soul that embraces both.

Tony Berg's production is a wonder of clarity and minimalism. He fleshes out Hawkins' voice, guitar, and foot-tapping with just enough bass, percussion, and electric guitar to add interest without destroying intimacy. The eerie steel guitar of Greg Leisz, especially, helps turn Jesse Winchester's "Biloxi" into an emotional tour de force. (It doesn't hurt that Hawkins hails from there.) This is definitely one of those records whose sound pushes it into the recommended list.

It remains to be seen whether this major label's modest offering will reap the kind of rewards that its metabolism requires. Until then, what may be Geffen's folly is our good fortune.

—Michael Ross

KRISTIN HERSH: Fits and Makers
Sire/Reprise 25413–2 (CD). Lenny Kaye, Kristin Hersh, prod.; Phil Brown, Steve Rizzo, engs. No SPARS code. TT: 50:30
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Awash in Toilet Duck, what’s a Musical Mom like Kristin Hersh to do when the kids nod off? Rediscover Joni Mitchell, more than likely, and reach across the sofa for the acoustic guitar (a Collings), muted cello (Jan Scarpantoni), lyrics that make Jim Morrison sound lucid, and a guest turn from Michael Stipe. Living proof you can have it all, the 27-year-old founder/member of Throwing Muses and mother of two made studio time for two whole weeks (with producer/critic/Patti Smith/guitarist Lenny Kaye, at Stable Sound, Portsmouth, RI) and, before anybody could say “folk art,” crafted an acoustic solo album that’s like a perfectly elegant piece of Kentucky country weaving.

Simultaneously classy and homespun, in terms of simple listening pleasure, *Hips and Makers* is a hedonist’s delight: clean, pure, flowing, with plenty of vocal modulation; loomed like a textile from warp and weft of percussion (uncredited, but David Narcizo), acoustic guitar (deemed “uniquely visceral,” which translates as “she strums a lot”), and vocals (all Hersh, except Stipe on “Your Ghost”).

Like a designer dress that looks real good and then runs at the cleaners, however, style ain’t necessarily substance. Hersh, irrespective of what her publicist claims, is only mentioned in the same sentence as Edith Piaf and Nina Simone because Lady Miss Kier’s on another label.

And watch out for “non-linear lyrics.” Assembled in some free-associative Cuisinart like James Joyce soup, these are the invariable early-warning signs of artists in the throes of Attention Deficit Disorder. When you’ve got “lyrics” like “you can come back I haven’t left you yet and when the lights go out I pick the angel up I only have two left feet” (“Me and My Charms”), you’ve got composers who either can’t find enough time to work through one single thought to its logical conclusion, or they’re trying for some sort of Baudelaire/Mallarmé/Gauguin neo-Symbolist evocation of emotion, using the visualizations of the average self-absorbed 17-year-old as bricks and mortar. If that’s what Hersh is after, come back, down-home plain-speakin’ little Edie Brickell (“I am who I am if you know what I mean! / Are you who you are, or what?”).

One explanation is that Hersh—the slack’s version of SuperMom, garbed in the exhumation of It’s A Beautiful Day’s old crocheted vest, an Indian gauze skirt, a white Tee, and combat boots—is so stretched in terms of time, energy, and perspective that she can’t even make a dent in the ironing. Bravely, she insists working makes her a good mother and being a good mother makes her a good musician. ‘Being a housewife is a job everyone should do, at least for a little while; it gives you a greater sense of humility,” she says. Actually, it should teach you to know your limits and adjust your expectations. Bag it, Kristin. No one but the family likes home movies.

—Beth Jacques

**LATIN PLAYBOYS: Latin Playboys**
Slash/Warner Bros. 45843-2 (CD); Latin Playboys, engs., prod. AAD. TT: 37:31

Every now and again you run across a record that’s as unpretentious as a cold six-pack, as much fun as a teeter-totter, yet as insightful as Paul Cezanne on a good day. *Latin Playboys* is one of these.

Like many such records, its quiet grandeur is the result of a happy accident. The basic tracks were recorded by East L.A.’s answer to Mozart—David Hidalgo of Los Lobos—on a four-track cassette machine in his kitchen. He played them for bandmate Louie Pérez, who threw the lyrics and vocals together, raked the band, along with producer Mitchell Froom (see interview on p.22) and engineer Chad Blake, decided that they were a little too “out there” for *Kiko*, II, and too special to be re-recorded, so Froom hit up Warner Bros. for a few days in the studio to apply the finishing touches. Thus were born the Latin Playboys.

This album picks up where *Kiko* left off. But whereas *Kiko* exudes the half-brilled energy of a summer street festival, *Latin Playboys* simmers with the intimate grace of a late-night jam session played long after the kids have gone to bed. Hidalgo’s basic tracks are melded with little snippets of found music to form a sound that’s experimental but never self-indulgent. His stripped-down guitar playing on cuts like “Forever Night Shade Mary” ought to be required listening down at the music shop—with its deliberate pace and spaces that say as much as the notes, it’s absolutely anti—Van Halen.

Pérez’s lyrics do more than grace this wonderful music. These are songs that ask big questions in a small way. When Hidalgo sings, “If the ocean was whiskey, or filled with him / Would you lead me away, or push me in?” it’s plenty funny, but it’s more than a joke. Most impressive is the way a song like “Crayon Sun” evokes the simple complexities of childhood in a way that would make Marcel Proust proud. “Scrunched-up face in a picture booth / Feet don’t touch the bathroom floor / Ball goes flying through the air / Neighbor’s tree needs me to climb / This is what I am.” And in keeping with the Playboys’ penchant for surprise, the lyrics to “Rudy’s Party,” arguably Pérez’s best, go unsung on the album, immortalized only on the lyric sheet as the closest thing to poetry you’ll find inside a jewelbox. Read it or your life will be poorer.

The sound is as striking as the music. This doesn’t how the “acoustic instruments in a natural space” ideal, but, like *Kiko*, is full of character. The soundstage is wide, instruments placed with a definite sense of purpose, with the striking sense of height the biggest surprise. *(There is audible modulation noise, however, as well as tape hiss and a distinct lack of extreme highs.—Ed.)*

Whatever it lacks in tonal accuracy *Latin Playboys* makes up for in emotional impact. Listening to the fiddle with taxicab accompaniment on “Rudy’s Party” can make you believe, just for a second, that your listening room has turned into David Hidalgo’s kitchen. Which is, I imagine, quite a magical place, ugly wallpaper or not.

*Latin Playboys* isn’t a particularly forthcoming record. Even now, on my umpteenth playing, I’m still hearing things I hadn’t heard before, and racking my brain about how to put this magical music into words. Suffice to say, it’s one of my favorite records. Ever. —Allen St. John

**BUSTER POINDEXTER: Buster’s Happy Hour**
Rhino Forward R2 71680 (CD); Brian Koonin, prod., eng. AAD. TT: 52:45

Past, Buddy—looking for the perfect party album? Look no further—bless yo’ ignorant heart, you’ve found it. *Buster’s Happy Hour*, the latest from Buster Poindexter (aka David Johansen, formerly of original ’70s punk band *The New York Dolls*), is just the ticket. I was at my sister’s house in Austin (thanks, Karen) over Memorial Day, playing poker and waiting for Corey Greenberg to show (he didn’t). I threw this disc in the player and, before anyone realized what had happened, the poker’d stopped and the dancin’-drinkin’ had begun.

*Buster’s Happy Hour* is a collection of classic and contemporary drinking and party songs (Johnny Otis’s “Rockin’ All Nite Long,” Harrison Nelson’s “I Got Loaded,” etc) guaranteed to loosen up any get-together whether it needs it or not. Warning: Don’t listen to this album alone. I listened to it again by myself once I got back to Santa Fe, and had a hangover by the end of it. Recommended. Now . . . wherezat Miller at? —Steve “Brewski” Stoner

**ALI FARKA TOURE/RY COODER: Talking Timbuktu**
Hannibal HNCD1381 (CD only). Ry Cooder, prod.; Mark Ettel, eng. AAD. TT: 60:06

Niafunke—near Timbuktu, in Mali, and...
Ali Farka Toure and Ry Cooder—music of primal simplicity in five languages.

far from the MTV, jumpcut, media-sound-byte world most of us inhabit—is where guitarist/singer Ali Farka Toure spends most of his time tending his farm and family—time measured in seasons, not seconds or beats per minute. Events are a birth, a death, a harvest, not Sharon Stone’s latest boyfriend.

Toure’s music reflects this. Guitar riffs as repetitive as sunrise and sunset join with percussion like the threshing of grain in cycles more evocative of natural than human time. He sings of primal human emotions—love, trust, happiness—with haiku-like simplicity in many languages (five on this disc alone).

If the music is unhurried, it’s not to be confused with lethargic—a man with four wives and eleven children can’t afford to be lazy. Events, however, unfold in their time, with no rush toward a hook or pay-off. The trance grooves and pentatonic scales that became the blues on this side of the big pond are in evidence, but European harmonic tension and resolution are not. Toure’s closest American cousin was John Lee Hooker, whose vocal timbres and one-chord riffs are eerily echoed in “Amandra” and “Ai Du.”

And, oh yes, Ry Cooder is here too, as producer and sideman. By originally wanted to record Toure with the Hook, but at this session opted instead to add Clarence “Gatemouth” Brown to a couple of cuts. Brown’s blues are normally anything but basic, leaning more toward sophisticated Texas swing. It’s surprising, then, how appropriate his electric guitar riffs sound on “Lasidanan.”

If Cooder appears an afterthought, it’s entirely to his credit, and reflects his respect for Toure’s music. This is not a jam session like Meeting by the River, last year’s collaboration with Vishwanath Bhatt. Here, Cooder weaves his various guitars subtly into the fabric, adding just enough event-oriented attitude to widen the appeal to Western audiences. The sound is simple, warm, and attractive, and somewhat wetter than Toure’s last album, the extremely well-received The Source.

Ali Farka Toure refused Cooder’s request to cut one tune for Talking TImbuktu—it would attract evil spirits, he said. This music is not elementary, it’s elemental, and reminds us that Africa is not only the birthplace of the blues, but of humanity itself.

—Michael Ross  

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DOLBY AC-3

Editor:
What is going on in High End? To look at Stereophile ever these many months, and particularly JA’s most recent editorial, “Squeezing the Music ‘til the Bits Squeak” (July ’94, p.3), there is fear and loathing of audio coding, DCC set off a firestorm, then MiniDisc, and it’s now fueled by MPEG audio and Dolby AC-3. He says coding throws away information, causes audible flaws, is not the equal of CD, is not “perfect,” and he generally laments that the High End as we know it may be coming to an end.

But why? No one thinks audio coding killed the LP. That deed was done by the audio cassette — of all things — and its fate sealed by CD. Has someone now declared the CD format dead? No way. In fact, the age of 5" discs is just coming into its own. What was introduced as an audio carrier has bloomed into a vehicle for games, data, and video. Its roots grow deeper every day with these diverging applications, and more disc pressing plants with greater capacity are coming on-line around the world to meet the demand. High-density versions of the 5" disc are in the wings to take advantage of this immense, cheap manufacturing capacity. No, the 5" disc — and the CD, in particular — will be with us for quite a long time to come. Considering that neither DCC nor MiniDisc ever pretended to overthrow CD (cassette was their target), there is no reason to suspect CD is in any jeopardy whatsoever.

Maybe that’s the real problem. Maybe the CD, for all its sonic virtues and market dominance, is still considered an inferior successor to the LP, suggesting that even the “uncompromised” purity of 16-bit PCM falls somewhere short of the demands of the High End. This view is supported by stories of audiophiles lustings for the latest tricks and treats of noise-shaping and bit-mapping, of green markers, or anything else that can bring higher resolution and purity of sound. Even though true 16-bit performance is rarely achieved in digital audio recordings (assuming it happens at all), audiophiles already have their sights set on even more—18 bits, 20 bits. And why stop there when they can go for higher sampling rates, too—not the measly 48kHz used in professional audio, but a whopping 96kHz as found in the new breed of DAT recorders? Wrap all that into a super CD format and you’d really have something!

But nobody in the audiophile community seems to be talking about such an improved CD format. Why not? The day is surely coming when this will be possible, thanks to 5" discs with more than quad-rupled capacity and data rate, as described by Philips, JVC, and others, and planned for introduction in a couple of years. They will be able to carry two hours of good-looking video with multi-channel audio, or an immense volume of any type of data, or amazing video games, or elaborate CD-ROM programs. One more thing they can carry is plain old audio. What—a 5-hour CD? Sure. Or how about a full-length CD with 20-bit, 96kHz-sampled, uncompressed stereo? It can do that, too. It can even carry 5-channel, discrete, 16-bit, 44.1kHz-sampled PCM—if you can tolerate your surround-sound delivered in unadulterated “CD quality,” that is. High-density discs can do all these things.

The only thing they cannot seem to do is attract the attention of the High End. Maybe this would require some unusual vision, or some coordination and cooperation with industry, or it might require the High End to actually state just what digital audio specifications would really be acceptable to an audiophile's ears, so that the industry would know where the target is. All they know for now is “that it ain’t good enough yet, keep trying.”

With CD so firmly entrenched, how does a MiniDisc player, or a digital cable radio box, or even a laserdisc player with PCM and AC-3 audio represent any kind of threat to the CD or the High End? The audio cassette is a massively popular “mid-fi” format, yet poses no threat to the High End at all. How come? Just how many “purist” formats are needed besides CD to sustain the High End? If CD isn’t pure enough, why not work on that, since it holds the greatest promise for improvement? And if CD is basically adequate, then why isn’t there room for other formats, like compact cassette or AM/FM radio, that meet the needs of their audiences, even if they are not deemed perfection by someone else’s standards? We think there is plenty of room for such diversity in the marketplace.

With so much opportunity for a new, high-capacity CD standard begging for attention, why focus on other technolo-gies and products that are designed for their own specific applications; that are intended to offer true quality and value in a competitive mass market; that pose no threat to the high-end community; and then declare them somehow inadequate for audiophile purposes? What is really the purpose in this? And why report erroneously that “there is huge pressure from the cable TV and cinema industries to abandon linear AC-3,” when they cannot abandon something they’ve never had, and never could? Why print spurious misinformation about audio coders claiming “all timing information is sacrificed in order to perform the necessary frequency analysis,” when there is no technical basis in such a statement whatsoever? Why paint Dolby AC-3 as a 64kbps per channel coder when it does not partition its shared bitpool in this manner at all? Why say that audio coders offer almost no hope of getting significantly better, when in fact significant encoder improvements are indeed possible even long after decoding hardware is in the field? Is this supposed to be taken as constructive criticism? Are these tactics supposed to further the cause of High End?

Try to remember that even the LP isn’t perfect, or AM/FM radio, or open-reel tape, or compact cassette, or NTSC video, or MTS TV stereo, or 35mm film, or 70mm six-track magnetic… They all have audible (or visible) flaws, but they all serve their own valid purposes, which is why they all succeed happily in the market. Why the idea of requiring unattainable, undefinable perfection becomes of paramount importance in your mind today, when it never existed before, and arguably cannot ever be fully achieved in any canned rendition of a real-life experience, ought to be examined before making it the universal excuse for rejecting everything that comes along. If the high-end press is truly interested in advancing the state of the art of audio quality, then looking at formats, products, and technologies that are not intended to serve its requirements would seem unproductive at best, and frustrating at worst. Yes, do look back from where we’ve come, but don’t forget to turn around to see where you might like to go. The journey will be much more rewarding.

ROGER DRESSELL
Dolby Laboratories Licensing Corp.
Re: higher-density CDs: Though the technology

Stereophile, September 1994
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(remember the sound)
highly stressed, such as when two men were talking with nothing happening in the other channels (as observed by him from the meters measuring voltage output to those channels).

It's undoubtedly true that a large-scale test of a system, employing many diverse listeners in many locations and setups, will discover problems that a limited number of people won't hear—just as, in another arena, computer software companies are always discovering—which is why they end up releasing buggy software even after extensive alpha and beta testing.

Beyond those points, we have still further areas of disagreement. Perhaps the most salient concerns Mr. Dressler's point 3, with respect to the feared migration of AC-3 to multi-channel CD. His objection to my point surprises me, because it has been John Kellogg, Dolby's now ex-spokesman, whom I have heard drumming into the heads of PARA dealers for two years running Dolby's position that "the future will be digital and the future will be multi-channel." He made no bones about the fact that this would be true for both film and music. Dolby has pointedly demonstrated AC-3 with music to me on two occasions, the last recent one being a year and a half ago. I would have to be extraordinarily naïve to think that Dolby has not been planning to extend AC-3's reach to multi-channel CD as soon as they feel there's an opportunity. What better platform to do it from than the recent adoption of AC-3 for both HDTV and the new discrete-channel laserdiscs?

Mr. Dressler also seems to imply that Stereophile somehow killed DCC by negatively covering in advance a product which turned out to sound pretty good. We covered it as thoroughly as we could, and more thoroughly than any other publication in the US, and possibly the world. Obviously, we are going to be critical of data-reduction schemes until it's proven to us that they're innocuous. When we listen to 16-bit PCM digital tapes taken from analog masters, we hear degradation; why should we assume that an algorithm which utilizes a fraction of the coding information can be done better? Besides, I'm sure that, in all candor, you will have to admit that DCC's lack of success has everything to do with its market inapplicability and little to do with Stereophile's coverage.

I appreciate the opportunity to discuss this situation with Mr. Dressler, and hope the dialogue continues. Stereophile will continue to push for a laserdisc (and eventually a CD) discrete multi-channel standard which has been finalized after audition by numerous independent parties rather than before. We will continue to seek 20-bit potential from every channel, rather than "nearly as good as" current CD. And, I assure you, we will audition every one of Dolby's efforts with open and unbiased ears when we're given the opportunity. —Larry Archibald

ORACLE MENTOR

I would like to thank Jack English for his appreciation of our Oracle Mentor Studio loudspeaker.

As JE noted, the Oracle Mentor Studio is an elegant and fairly small speaker. Given its physical size (and the inevitable laws of physics), it can't reproduce sub-low frequencies. It has to be understood that the Mentor Studio was designed to be used in moderate-sized rooms (16' by 22'), where those sub-low frequencies can hardly be reproduced. Also, less volume is needed in smaller rooms to achieve a higher sound-pressure level, therefore overcoming the dynamic compression noted by JE when playing the speakers very loud.

Taking all that into consideration, the design goal was to favor a fast, clean, and articulate bass with a seamless blend to the satellites—as also experienced by JE. To achieve that goal, much care had been taken with the structural integrity of the cabinet. As described, the Mentor Studio cabinet is built with 1" MDF with additional horizontal and vertical bracing, and uses three different-angle walls in order to avoid internal standing waves.

Consumers can start with the satellites (the Mentor Monitor retails for $1800/pair), and later access the Mentor Studio sound by adding the subwoofer. A careful design, noted JE, taking more specifically about the musicality of mid and high frequencies. I would add to that a clever, evolving concept, where elegance and beauty are blended with musicality at a reasonable price. MARCEL RENDEAU, Oracle

ENERGY EXCEL

Editor:
One of the most difficult and delicate tasks of any manufacturer is to respond to a review that is wrong. Or, as loud, we say, to a review with which it disagrees. Difficult, because it tends to dwell on the negative; delicate because the reader may be eager to label criticism of the review or the reviewer as "sour grapes."

Thankfully, Steven Stone's joint review of the Energy Excel and Paradigm Atom is the first review of an Energy Loudspeaker that we find substantially at odds with what we heard when we were the speaker to be so. Respond we must.

However, we can't point to the judgments of our listening panels during Excel development—engineers and audiophile years of experience, who compared the Excel not only with live music but with other superior small speakers and with more expensive Energy models; obviously they would support their own work.

We can't cite the tremendous enthusiasm of our worldwide distributors, US representatives and dealers, or the sales success of the Excel—we all know of commercially successful, bad-sounding speakers.

We can't remind the many attendees of the '93 and '94 Stereophile Shows how impressed they were with the sound of the Excels with an Energy AS90 powered sub-woofer (system price $700). Well, yes we can!

We aren't going to criticize JA's measurements—which are extensive and close to our own. So where does that leave us?

Well, first let's eliminate the Paradigm Atoms—or rather, any criticism thereof. They are good speakers and deserve success!

That leaves us with Steven Stone—his subjective judgment and his conclusions. Are they credible?

We found the review both confusing and incoherent. In early comments, SS referred to two small speakers with big ambitions but tells us that only one "sings." Yet in his concluding comments he said both speakers were "an answered prayer." Where does that leave the Excel—loser or "answered prayer"?

SS asked to review the Excels after spending a couple of hours listening to them at the 1993 Winter Consumer Electronics Show. Energy staff on hand recall him and an associate being "blown away" by the speakers. Coincidentally, Tom Norton mentions in his Energy Veritas v2.8 review in the June '94 issue [Vol.17 No.6, p.96] that his friend Randy Tomlinson had been similarly impressed by the Excels at the Show.

Steve had the Excels for about eight months before we saw the review and, to our knowledge, did extensive listening. Throughout this protracted period, we were in periodic contact with him for news on its progress. At all times SS gave every indication that he was very pleased with the Excels—that the review was progressing well (which, to a manufacturer, means "positively"), and that we would be pleased with the result. At no time was there any communication to lead us to be concerned as to whether the product was defective, had been improperly set up, or, for whatever reason, was not sounding its best. Yet to read the review, it sounds as if he is talking about a different speaker—the Excel's tweeter is "a bit nasty for me," and the speaker, overall, pays "too high a price" for its successes.

A look at the Excel's frequency response shows a smooth curve by any standard, particularly so for a $150 speaker. There is a narrow-band 6dB rise at 18kHz (which may or may not be audible). JA speculated that this might have been responsible for what SS didn't like about the tweeter; but according to Energy Chief Engineer John Tchilinguirian, it is just as likely the cause of the "air" he did like. An 8dB lift at 25kHz compares to, for example, a 15dB lift at 25kHz in the $8000/pair B&W Silver Signature John Bowers so highly praised in the June issue. The Excel's impulse response is also significantly better than that of the B&W.

Still, in the June issue, SS is "overall quite impressed" with a speaker that has a 12dB suckout from 3kHz to 7kHz, as well as ragged tweeter response, extremely poor vertical dispersion, poor bass extension, and low 82dB sensitivity—all this for $3950/pair (the Green Mountain Audio Direct price).

So what is the accurate description of the Energy Excel? Is it an answered prayer or a flawed overachiever? We respectfully question the judgment of someone who is "impressed" by the much-flawed performance of a $4000 loudspeaker but very critical of a truly impressive speaker that sells for just $150—particularly when he
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started out loving it.

Ultimately only you, the reader, can set-

tile the issue. However, we’d like Stereophile
to make their own judgment, and are pre-
pared to “put our money where our
mouth is” to help them do it.

We are confident enough of Energy’s
Excell, and of designer John Thielinguirian’s
(team (see the June ’94 Stereophile for an
interview with John and a review of his
Energy Veritas v2.8), that we are making
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them! Send us your warranty registration
card along with this “Manufacturer’s Com-
mment” (cut from the magazine), and we
will send you an audiophile recording of
the Holly Cole Trio that will definitely
make your Excc’s sing.” This “demo” CD has
a retail value of $18.

We rest our case. Happy listening.

JEFF PERCY
Audio Products International

PARADIGM ATOM

Editor:
Our thanks to SS for his thoughtful review of
the Paradigm Atom. Even at this budget
price, we have worked very hard to pro-
duce a musically satisfying speaker.

We have always believed that better
sound begins with better drive-units. The
Atom uses a Paradigm–made bass/mid
driver and a highly regarded European-
made tweeter. It is additionally worth
noting that the Atom bass/mid driver uses
a high–pressure diecast–chassis—certainly
not typical in this price range.

Readers will also be interested to know
that the next model up is the Titan. It was
designed to offer better resolution, sound-
ing, and power handling for a small
premium over the Atom.

W.A. VANDERMARL
Dir. Sales & Marketing, AudioStream

GRYPHON EXORCIST

Editor:
Thank you for again mentioning the Gyr-
phon Exorcist. We appreciate the time and
attention Stereophile has given to evaluating
our system demagnetizer, and we thank
Robert Deutsch for his thoughtful findings.

Every Exorcist is packaged with user
instructions explaining the problem of
magnetically induced distortion and how
to use the Exorcist to correct that inevitable
situation. The owner is encouraged to
either leave the room or protect higher ears
during the treatment process. Otherwise,
as observed by Alvin Gold, listeners would
experience a temporary drop-off in hearing
sensitivity at 1kHz, which would obvi-
ously affect their perception of sound
quality.

One point that has not received suffi-
cient attention is that the Exorcist requires
less than 60 seconds to fully demagnetize
your system. Some systems, especially
those that are tube-based, remagnetize
themselves quite frequently, in which case
the relatively short time required to use the
Gryphon Exorcist becomes a substantial
advantage.

We again wish to thank Bob Deutsch
and Jonathan Scull for their reviews of the
product, and thank Stereophile’s writers for
the enthusiastic reception which they gave
to the Exorcist at the Stereophile Hi-Fi ’94
Show in Miami this spring.

DOUGLAS SPIETER
Gryphon U.S.A.

MICHAEL GREEN IN MIAMI

Editor:
I went directly from one of my dealer/con-
sumer road trips to Hi-Fi ’94 in Miami, so
didn’t have a chance to thumb through the
May Stereophile until almost Show time.

When I read the Winter CES report, I was
excited to see my Chameleon speakers
cited in Guy Lencoe’s “Best and Worst of
Show” column as “the best disappearing act”
in Las Vegas.

I was brought right back down to Earth
on the first morning of the Miami Show,
however, as several concerned audiophiles
asked me in hushed, consoling tones what
had happened to my speakers in Las Vegas.

Were they stolen? Had they gone up in an
amplifier catastrophe?

Please reassure your readers that Guy’s
“disappearing” comment wasn’t intended
to be taken literally, but was actually a
compliment to the speakers’ imaging
capabilities—the ability to “disappear” into
a free-floating soundstage.

That out of the way, more on the Miami
Show. First, thanks for doing it. The hotel
was beautiful, and I always appreciate
the opportunity to talk directly to the con-
sumers. Thanks, too, to The Cable Company
for running a “Meet the Designers” forum in
their booth.

Second, I would like my fellow exhibi-
tors to join me in a moment of silent
reverence for all of the terrible things we
have said about the flimsy, wallboard-
constructed rooms we usually contend
with at shows. In retrospect, compared to
the concrete floors, walls, and ceilings we
were battling in Miami, other hotel acous-
tic challenges start to take on a soft, warm,
friendly glow.

Admittedly, my perspective on the
whole subject of show acoustics may be
unusual due to my involvement in so many
rooms (we had RoomTune acoustic treat-
ment in more than 40 rooms in Las Vegas,
and in 25 to 30 rooms at the smaller Miami
Show). But based on the many comments
I heard, Hi-Fi ’94 could actually change
the course of our industry. As a result of
the difficult Miami acoustic experience,
every exhibitor who is prepared to think
it through must reconsider what has some-
times seemed an unstoppable trend in our
industry toward anti-resonance and hyper-
rigidity. And I don’t just mean hyper-
rigidity as a misguided ideal room type,
but also as a goal in speaker–cabinet con-
struction and chassis design for electronics.

Trying to take the resonance out of music
reproduction through hyper-rigidity (or
other forms of anti-resonant damping/
deadening) is like trying to build a guitar
or piano out of concrete (or marble, or
Corian, or Fountainhead). You will hear
the strings all right, but it won’t play music
the way you want to hear it. Sure, you need
to control resonance; but try to kill reso-
nance, and you have thrown the baby (the

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music) out with the bathwater.

On that note, I'll get off the soapbox and simply thank you for all the hard work that made for another fun Show. Keep up the good work!

MICHAEL GREEN
Point Pleasant, PA

ACOUSTIC SOUNDS & LPS
Editor:
I received the July '94 issue of Stereophile and was more than a bit surprised to read John Atkinson's second paragraph on p.3 (he said, "the LP is all but dead"). So, I wrote this for him and for his readers' information.

Now and in the next two years, there will be more high-quality vinyl coming out than I have seen since I started my business about six years ago. There is definitely a resurgence in new vinyl, not only in the US, but in Germany, Switzerland, and Asian countries as well. Just to name a few of the companies who are doing important releases and reissues:

Classic Records RCA Living Stereo reissues (on 180-gram vinyl)

Decca SXL reissues (on 180gm vinyl)

Blue Note reissues (on 180gm vinyl)

Mobile Fidelity reissues (on 200gm vinyl)

EMI reissues by Wilson (on 180gm vinyl)

Reference Recordings Mastercuts reissues (on 180gm vinyl), and their own recordings

Sheffield Lab (new releases on 180gm vinyl)

Chesky RCA reissues and their own recordings (on 180gm vinyl)

SteepleChase reissues (on 180gm vinyl)

Mosaic jazz reissues (on 180gm vinyl)

Super Analogue reissues (on 180gm vinyl)

Japanese-pressing Blue Note Analogue Productions reissues & recordings (on 180gm vinyl)

AudioQuest new recordings (on 180gm vinyl)

Plus many other miscellaneous releases. There are also a lot of new pop records coming out, like Pink Floyd's The Division Bell, mastered by Doug Sax, and the latest Indigo Girls (Swamp Ophelia), along with other alternative pop music. And most of the new pop recordings are being pressed in England or Germany, the latest ones being Rickie Lee Jones' Traffic From Paradise, and Counting Crows' August and Everything After—both pressed in England.

We are very excited about the number of new vinyl LPs that are coming out. In fact, we were a bit worried that the public might not have been able to support them. We were happy to be wrong; people are buying them as soon as they are available. We also hear rumors that Dunhill Compact Classics and others are coming out with new titles on vinyl. Believe it or not, the majors are finally catching on, and are also catering to the audiophiles. Companies like MCA, Sony, and Atlantic are offering Gold CDs mastered from the original master tapes. They must have noticed that there is enough of an audiophile market to do this. With any luck, maybe they will do the same for vinyl on HQ 180.

Mobile Fidelity just bought a few record presses and is setting them up now, which shows a very big commitment to making more vinyl. Also, RTI, the plant that presses 180gm vinyl, is busier now than they have been in the last five years. In fact, they have a long waiting list.

Chad Kassem
Owner, Acoustic Sounds
P.S. Just look at the inside-front-cover ad next to July's "As We See It." It is an advertisement for the Aragon Phono Preampifier.

SONIC FRONTIERS

Editor:
Those of us in the Great White North have become used to the additional delays associated with receiving our Stereophile issues some seven to ten days after our audiophile brethren to the south.

Today, the Fourth of July, I received my June copy and began perusing the pages with my usual intensity.

Early on, in the "Letters" section, I spied our company name within a lengthy letter and began reading it carefully.

The letter in question, titled "Single-Ended Fears" [p.16], authored by a Michael W. Maduras of Glendale, California, raised some interesting points. However, I would like to respond to his characterizations of our "design team's" perspective on this matter.

I think Mr. Maduras' observation is entirely mistaken. When we hear or read about issues close to our heart which we feel are mistruths, oversimplifications, or simple hyperbole, we often feel the need to respond. Our intention was that our response (a letter published in the February '94 issue) should be "thorough and factual." To have it characterized as "hysterical" is unfounded.

Once again, for those of you who may have misconstrued our efforts to debate Mr. Had's original letter as an attack on a competitor (ie, Cary bashing), this was not our goal or intention. Let me recap our reasons for writing our response. It is our view that:

• Single-ended (SE) designs have additional limitations with regards to choice of speakers as compared to higher-power push-pull designs. As the speaker is the critical transducer, amplifier manufacturers should design products which service their needs, not dictate their design.

• They are not, by definition (in our studied opinion), the best amp configuration possible to the exclusion of all others, especially for the four reasons given by Mr. Had. Admittedly, they do have some unique sonic strengths.

• Execution and integration are the greatest keys to any successful product's success.

• There is more than one way to design an SE amp. Cary's products represent one of these ways.

• Sonic Frontiers, Inc., does not dismiss the SE approach, but we do understand its limitations. SE designs can produce wonderful sounds, if mated to the correct speaker.

In Mr. Maduras' letter, he frequently uses DO's review of the CAD-805 as the validating point in this debate. Although I can only speculate that his letter was written some time ago, I must point out that a few months back, after DO's CAD-805 review, this same DO lavished high praise on our SFM-160 product (June '94), a traditional push-pull regulated pentode design. In this review, DO clearly points out the strengths of this (our) design approach and the technical strength of our product's circuit topology and "execution." Remember, our original response stated that "... most design approaches have some merit (pros and cons)." Lastly, in this review, DO has written a sidebar item on feedback. If I'm not mistaken, his views on this subject are very similar (if not identical) to those expressed in our design team's original response letter to Mr. Had's four-point SE design treatise.

Although we did not expressly announce it in our original letter, SFJ has plans (actually formulated as far back as 1992) to launch triode designs in both push-pull and SE configurations as complementary pieces to our existing "traditional" tube amp offerings. However, we will not pronounce them as suitable for all consumers in all systems—there is not one amp type which is best for all speakers, to which I think we can all agree.

We have no desire to squelch the renewed interest in the SE school of amplifier design. Our goal was to ensure that the nontechnical audiophile readership of Stereophile would be exposed to a balanced view of this interesting and obviously controversial topic.

If we are to learn anything from the past (besides old amp-design techniques), it should be from the most "classic" civilization of all—the Greeks. A little dash of the "golden mean" wouldn't hurt any of us in this typically obsessive hobby.

CHRIS JOHNSON
President (and Design Team member)
Sonic Frontiers

PARASOUND & THE BURR-BROWN PCM63
Editor:
In his review of the Adcom GDA-600 in Stereophile (March '94), Bob Harley states that it's the only under-$1500 D/A converter to use Burr-Brown PCM63 DAC chips, and that their use in a $750 product is unprecedented. Bob unfortunately neglected to mention two important Parasound D/A converters which are without precedent.

The Parasound DAC-1000, which has been available since June '93, employs two Burr-Brown PCM63P J-grade DACs. For $735, it also includes both TosLink and ST optical inputs, a Crystal CS8412 low-jitter receiver, NPC 5813 filter, Vishay resistors, three separate power trans-
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formers, and power supplies with nine separate regulators. The Parasound D/AC-1500, which has been available since January 1994, employs four Burr-Brown PC63P K–grade DACs in a dual-differential, fully balanced design. For $1295, it includes even larger power supplies, dual-mono construction with separate PCBs for each channel, XLR outputs, a second coaxial input, and more sophisticated analog circuitry. Its performance has been favorably compared to units selling for more than five times its price.

We design our digital products exclusively with more expensive multi–bit Burr-Brown DACs, including our new Parasound C/DP-1000 CD player/transport (with its user-installable module for ST and AES/EBU outputs). RICHARD SCHRAM Parasound

PARASOUND & THE ANALOG DEVICES AD712 Editor: Readers may get an incorrect impression from reading Walt Jung's letter in the May 1994 Stereophile [Vol.17 No.5, p.17] in defense of the Analog Devices AD712 IC. The fact is that we (including John Curl) have very high regard for this device. We've chosen to use it in our new P/HP-850 preamplifier and CDP-1000 circuitry. As op-amps go, the AD712 is a terrific performer, and more musical than many more "modern" designs, including some by Analog Devices.

However, the fact remains that, everything else being equal, an IC is ultimately a compromise when compared to a properly designed discrete circuit. This statement reflects John Curl's experience with audio circuits.

In the case of the Parasound HCA-2200 II power amplifier, the redesign to avoid using the AD712 for anything other than the DC servos, and the subsequent direct coupling or coupling through matched J–FET pairs, were major contributors to significant sonic improvement. In John's estimation, the removal of this IC from the signal path played a large role as did many of the other circuit details, but it was not the only determining factor. Steve Stone elected to report this single statement of John's. Perhaps it is his footnote #2 (March '94, p.125), which, in its brevity, does not report the other design improvements, which is of concern to Walt.

I'm not sure that there is a paradox, as Walt suggests. The same device was used in two different categories of equipment, and was subject to the comments of two different reviewers. And while the AD712 was not solely to blame for one reviewer's comments, neither was it the lone star responsible for the other's.

We've gone to great lengths to use discrete circuits wherever possible, because John has shown us that they are the most musical performers. No doubt this will be somewhat inflammatory to the designers (or should I say the accountants?) in some high-end companies where ICs are used extensively. I can't predict whether John Curl will wish to join this dialogue, but I sincerely hope he will, since it may give Stereophile readers further insights into why his designs, like the Vendetta, Denonness JC80, and now Parasound HCA-2200 II, have earned such widespread acclaim.

RICHARD SCHRAM
President, Parasound

WAVESTREAM KINETICS TRIODE-V8 Editor: I would like to thank Steven Stone for his enthusiastic comments regarding my new amplifier design for Wavestream Kinetics: the Triode-V8 (in his WCES report, May '94 Stereophile). Thanks for including the photo. In SS's report, it is implied that the power output of the V8 is 64W. The 64W is the additional power provided by the 12GN7 grid-current sinks. If not these, the power output with KT99's would have been 230W instead of the rated output of 300W. The V8 is switchable to 150W class-A.

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WANTED

WANTED: OLD, NEW, TUBE, McIntosh, Marantz, Dyna, ARC, Conrad-Johnson, JBL, EV, Jensen, Klyne, Levinson, Cello, Wilson, Quad, Sequeria, Altec, Fulton, Linn, Thorens, Western Electric, EMT, 33LP, etc. (713) 728-4343, fax (713) 723-1301, Maury Corb.

ESOTERIC AUDIO USA, a fast-growing high-end audio company, has openings for knowledgeable professionals in areas including sales, marketing, advertising, engineering, and manufacturing. Send resume to 44 Pearl Pancote Rd., Winda, CA 93680. All inquiries kept strictly confidential.

WANTED: JANSZEN SPEAKERS, 2-6s, 130s, 300s, 400s, 600s. Pre-1975 only, fine shape. Top prices paid. Also Eico, Fisher, Heath tube gear. Ron Gomez, P.O. Box 2267, Orinda, CA 94563, (510) 933-4599.

EXCHANGE: N.O.S. tube KT66, KT88, PX4, PX25 against WE 300A(B), WE 274A(B), RCA 300B, RCA 845. Tel./fax: (49) 6205-3964, K.A.L., Germany.

WANTED: TUBE HI-FI and commercial amplifiers and speakers. Altec, Jensen, Western Electric, McIntosh, Marantz, Heath, Scott, Fisher, Eico, RCA, Dynaco, Brook, etc. Power tubes: KT66, KT77, KT88, 6550, 6CA7, 807, 811A, 300A, 300B. Sonny Golden, 1413 Magnolia Lane, Midwest City, OK 73110, (405) 737-3312.

WANTED: McIntosh A116A, MC-60, MC-240, MB-71, MCD-7007. Tel./fax: (49) 6205-5964, K.A.L., Germany.

TOP PRICES FOR OLD: Altec, Brook, Fisher, JBL, Marantz, McIntosh, RCA, Scott, Western Electric. Tel./fax: (49) 6205-5964, K.A.L., Germany.

MARANTZ 510M amplifier. Need unit in excellent condition, both functionally and cosmetically. Steve, (404) 612-4932.

WANTED: CARVER M-400 "Cubes" and M-10r amplifiers. (805) 644-1249, Craig Luna.

QUICKSAND: L2000e, James, (713) 444-9215.

COLLECTOR BUYING (working or not, mon/stereo) old tube Marantz, McIntosh, Fisher, Tannoy, Artex speakers, Sequerra tuners, Krell, Levinson, ARC, turntables, arms, etc. Also, used wristwatches: Rolex, Audemars, Omega, radio, etc. For TRADE, very reasonable: B&W 801 Matrix II; Conrad-Johnson Premier 4; Duntech Sovereign 2001 (lately). Traveling often, NY-FL: (718) 387-7316 or (718) 383-5352, NY.


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Many spectra exist in high-end audio. There’s the spectrum of sounds we listen to, from Brad Miller’s (of Mobile Fidelity International) notorious space shuttle recording to delicate overtones dying away with the last note of a piano solo. There’s the huge spectrum of music which makes use of those diverse sounds. As Roger Dresser of Dolby Labs points out in this issue’s “Manufacturers’ Comments,” we listen to a huge spectrum of media: car radio, home radio, cassette, home CD, car CD, portable CD, MD, DCC, 8-track (at least in my ’76 Lincoln), DAT, LP, 7½ips, 15ips, and 30ips open-reel tape—and soon, no doubt, we’ll be able to listen to 16-bit PCM digital (or a data-compressed rendition of it) from our TVs, six-channel, two-hour-long CDs, credit-card-sized music singles, and perhaps music direct-injected into our consciousnesses. And, as Dresser further points out, there’s inevitably a large variation in sound qualities in this broad a spectrum of sources.

Spectral balance is one of the most important factors in sound reproduction. It determines whether music sounds heavy and slow, harsh and clangy, artificially present—or just right. Spectral balance is also critically important in audio journalism. Stereophile and its ilk live almost exclusively at one end of the spectrum—the high end. Stereophile readers and writers are exposed to—and even enthusiastically participate in—many different audio media. But people don’t read Stereophile to find the best kitchen radio, or even the best portable CD player—our recent coverage of Radio Shack’s Optimus CD-3400 notwithstanding. People read Stereophile to learn about the best LP playback, the best CD playback, the best digital—beyond-CD playback, the best master tapes, or whatever else comes along to most effectively and faithfully transmit the musical message.

This same group of enthusiasts are those who have been using laserdisc all along—people like J. Gordon Holt, Dick Olsher, Tom Norton, and Larry Johnson (Editor of our upcoming Guide to Home Theater, due to hit the newstands in early December). It makes you wonder about the argument presented by Dolby in this month’s “Manufacturers’ Comments,” which to me could be paraphrased as: “Dolby AC-3 is sonically transparent (though you can’t evaluate that yet—trust us), and it’s getting better. But you can’t get even 16 bits off of film soundtracks anyway, so absolute sound quality isn’t that important, particularly in a mass-market product like laserdisc. Besides, if the sound quality turns out to be really bad—which it won’t—the market will reject the product (unless we become the de facto new standard before the market is able to).”

Is this a confusing message to convey to an enthusiast audience about what’s always been an enthusiast product, or what? Having received Dresser’s letter, we’re now even more keenly interested to get our hands on the latest version of a Dolby AC-3 encode/decode product (a DTS encode/decode box is already on its way to us—see T&J’s report next month). Because, regardless of how it may sometimes seem, the spectrum of coverage at Stereophile definitely includes a hearty embrace of surround-sound for films and music—just as it includes retro-grades like JA and me, still struggling to get the best out of our poor old two channels. (I was one of those who let stereo “mature” for ten years before I converted from mono; after all, better to spend $1000 —my budget in the mid—60s—on one good channel than on two mediocre ones.) Though sometimes it may seem as if our authors are at war with each other, we’re actually just representing many points along the spectrum, which is how we interpret our calling.

Another very broad spectrum describes musical tastes (Corey at one end, JGH at the other) and tolerance for deficiencies in sound reproduction. Back when we had our annual writers’ conferences, it was always a treat to hear the visiting writers tear apart my and JA’s home systems. It didn’t seem to matter what equipment we had set up, or what our authors’ specific tastes were—whatever were we listening to was different from what they’d been listening to, and, almost universally, they didn’t like it.

It’s crucial to realize that the range of tastes in reproduced sound is very broad—I’ve had the same “Can you believe what they’re listening to?” experience visiting the homes of our writers, and even the listening rooms of many of the manufacturers whose products we favorably review. For some reason, people pretty much all agree on what sounds like live sound—as JGH points out, a live saxophone at CES invariably causes everyone’s head to turn—but they can’t agree on which problems in reproduced sound they’re willing to live with, and which are simply intolerable. That makes it crucial for Stereophile readers to understand the particular personalities—even biases—of individual reviewers so they can assess the applicability of those reviewers' views and reviews to their own sonic and musical priorities.

The broad spectrum of preferred sounds among our writers is only the tip of the high-end audio iceberg. Some people think it isn’t high-end audio if you’re listening to digital—only analog, preferably LP, will do. Others think only tubes transmit the truth of musical experience. Still others insist on electrostatic loudspeakers for ultimate transparency, while their counterparts are unsatisfied without the specificity, dynamics, and “accuracy” of moving-coil loudspeakers. Some think that it isn’t high-end audio unless your speakers are optimally positioned in a well-damped, optimally proportioned room in which the solitary listener remains firmly seated in his or her sweet spot.

The intensity of these preferences may constitute the driving force that keeps high-end audio alive, but it’s a mistake to think that any one of them captures what music reproduction is all about. Too often “high-end” means high-priced, or “not what you have.” I think high-end means caring about the musical result of all your efforts, and never resting until it sounds just like live music—in your home.

Larry Anderson

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